

**MAY**  
(MAY-JUNE)  
**1945**

# CHEMICAL PREVIEW

**NEW**

- ★ PROCESSES
- ★ MATERIALS
- ★ MACHINERY
- ★ PRODUCTS
- ★ APPLICATIONS

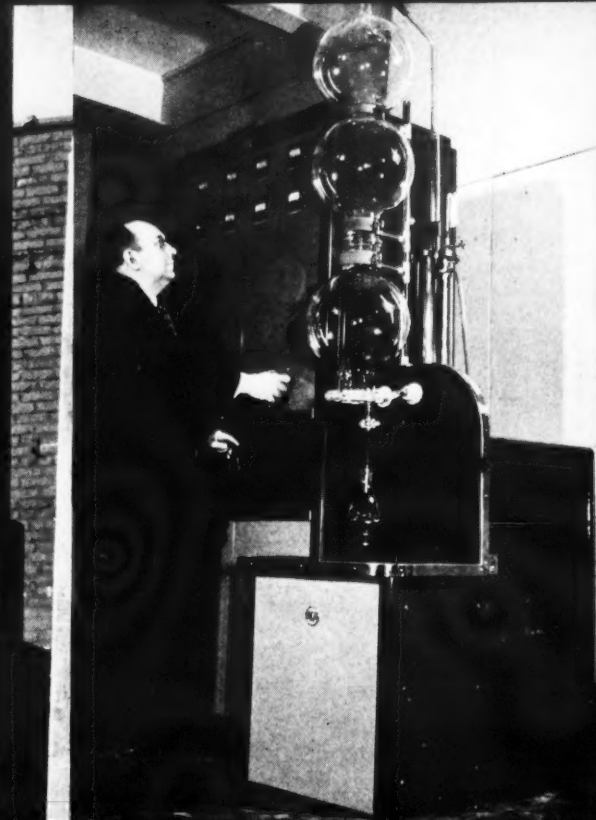
★  
Latest developments in chemical  
process manufacturing...for engi-  
neers, chemists and executives.

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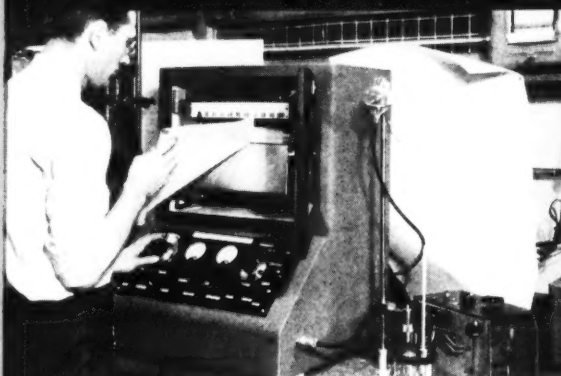
CCA



Cellular glass insulation, light as cork, features rigidity, compressive strength, resistance to acids, water for permanence in installations on towers (above), walls, tanks



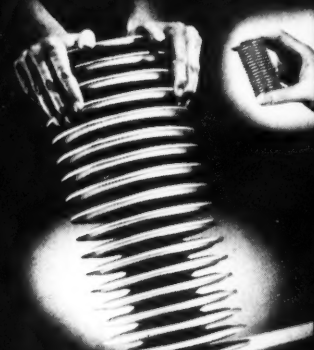
Electronic system for bulk reduction of purified penicillin is 48 times faster than conventional method



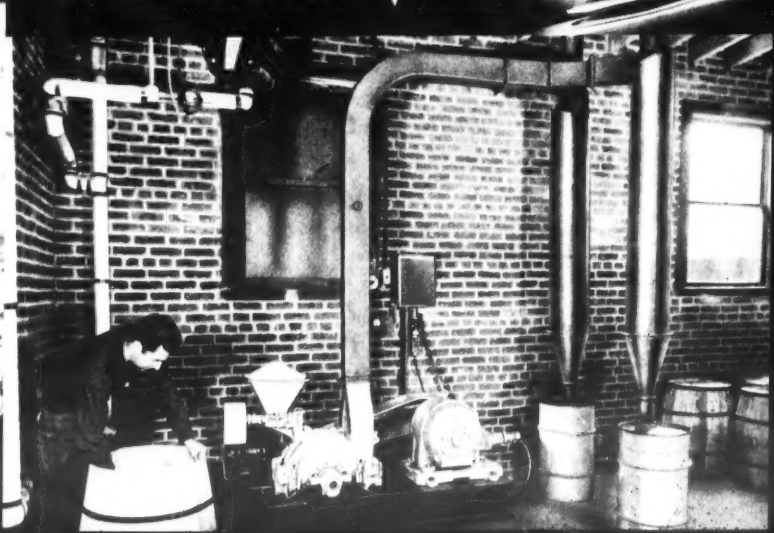
Bellows made in metals, sizes required: no limit on diameter or number of diaphragms

High speed visible recording Polarograph for analyses of many types: detects, identifies one ten millionth of a gram

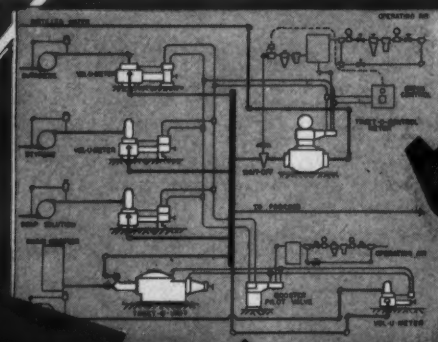
Pulverizer for powders 1-25 microns-mechanical, screenless type (collectors are special)



Soybeans, water, air make "whipped cream" foam that smothers chemical fires. Note how foam clings to wall.



# Working PRINCIPLE



SCALE  
MODEL

## Continuous Blending

MULTIPLE FLUIDS

For manufacturers who plan to beat postwar competition, the economy of operation and uniformity of end product produced by "streamlining" blending processes cannot be overlooked.

The trend is already under way and many plants today are converting from batch to continuous methods, relieving the operator from an excessive burden of responsibility. By using a tried and proven %Proportioneers% system, you eliminate guesswork, assure accurate blending, safeguard your investment in raw materials, maintain accurate control over your end product—and reduce reruns and losses due to improper compounding.

Ask for Bulletin 1700

Continuous  
AUTOMATIC  
BLENDING  
WILL WORK  
FOR You



# % PROPORTIONEERS, INC. %

WRITE TO %PROPORTIONEERS, INC.%, 41 CODDING ST., PROVIDENCE 1, RHODE ISLAND

## "That's Interesting"

### New Tele Set Feature Larger Pictures

An advanced television receiver is announced that provides pictures that are not only brighter and clearer than in previous sets but much larger. Size of the pictured image is  $21\frac{1}{2} \times 16$  inches. This greatly improved all around performance is made possible by four separate technical developments. (1) A reflective optical system which reflects from the image on the receiving tube projects onto the viewing screen about six times as much light as could be delivered from the screen by conventional F:2 movie projection without loss in image quality. (2) A translucent plastic viewing screen with surfaces designed for even distribution of light over the area of the screen and distribution of transmitted light within the normal viewing angle. (3) An automatic frequency control system which virtually eliminates picture distortion caused by interference from automobile ignition and other noise impulses. (4) A new high voltage type cathodic ray tube which produces brilliant images on the face of the cathode ray receiving tube. (RCA, Camden, N. J.)

### Time Saving Ideas

Bureau of Manpower Utilization bulletins illustrate and describe time, labor, material saving ideas in both plant and office. Of interest are some simple solutions of little, but important problems. One is the use of spirits of camphor to dilute mimeograph fluid after it has thickened. Another time saver is the use of an indicator pasted on an ordinary ruler which shows the cumulated total number of cards per inch measuring quantities of filing cards. The ruler is placed over a group of cards and a fairly accurate count may be obtained.

### Tickets, Please

Some railroads are now trying out a machine which prints tickets as they are needed as a possible solution to the problem imposed by maintaining large supplies of many different sorts of tickets. The machine also performs and maintains a bookkeeping record.

### Chinese Originated Macaroni

While macaroni owes some of its fame to "Yan Doodle" as well as to the skill of Italian cooks, it is really a Chinese dish, having been introduced to European tables for the first time in 1580.

### Chile Chickens Lay Blue Eggs

Due to copper in the soil which is consumed along with their pickings, chickens in some parts of Chile lay blue eggs.

### The Price of Rubber

During the last century no other essential commodity has varied so widely in price as has rubber. From a low of a few cents per pound to three dollars is the extent of the fluctuation.

### Oxen Preferred

In the early days during the opening of the West, oxen were often preferred to horses for pulling trains because they were much less affected by rattlesnake bites.

For more information on product at left, specify CP A1731  
... see information request  
blank between pages 2-3.



## Check Below, For More Product Information

EVERY PRODUCT DESCRIBED IN THIS ISSUE IS LISTED BELOW . . . Check the items that interest you. Mail to publisher . . . Information comes to you direct, without obligation.

✓ Key	Product	✓ Key	Product	✓ Key	Product	✓ Key	Product
<input type="checkbox"/>	A1731 Proportioning Pumps	<input type="checkbox"/>	A1785 Levé Control Signal	<input type="checkbox"/>	A1839 Pipe Joint Seal	<input type="checkbox"/>	A1894 Dieholders for Threaders
<input type="checkbox"/>	A1732 Process Plant Equipment	<input type="checkbox"/>	A1786 Visible-Recording	<input type="checkbox"/>	A1840 Driers	<input type="checkbox"/>	A1895 Pumps
<input type="checkbox"/>	A1733 Stainless Steel Equipment	<input type="checkbox"/>	A1787 Polarograph	<input type="checkbox"/>	A1841 Protective Coatings	<input type="checkbox"/>	A1896 Fire Trucks
<input type="checkbox"/>	A1734 Kettles	<input type="checkbox"/>	A1788 Reducing Valve	<input type="checkbox"/>	A1842 Pickling Inhibitors	<input type="checkbox"/>	A1897 Industrial Fabrics
<input type="checkbox"/>	A1735 pH Indicator	<input type="checkbox"/>	A1789 Flow Rate Indicator	<input type="checkbox"/>	A1843 Chemicals	<input type="checkbox"/>	A1898 Fluorescent Lights
<input type="checkbox"/>	A1736 Chain Barrel Conveyors	<input type="checkbox"/>	A1790 Power Units	<input type="checkbox"/>	A1844 Block Insulation	<input type="checkbox"/>	A1899 Metering & Waste Valve
<input type="checkbox"/>	A1737 Heat Exchangers	<input type="checkbox"/>	A1791 Electric Controls	<input type="checkbox"/>	A1845 Sodium Methylate	<input type="checkbox"/>	A1900 Pulverizers, Idlers, Take-ups
<input type="checkbox"/>	A1738 Blowers & Exhausters	<input type="checkbox"/>	A1792 Contact Pyrometer	<input type="checkbox"/>	A1846 Adhesives	<input type="checkbox"/>	A1901 Direct Action Threader
<input type="checkbox"/>	A1739 Filter Systems	<input type="checkbox"/>	A1793 Sapphire Gages	<input type="checkbox"/>	A1847 Rust Inhibiting Primer	<input type="checkbox"/>	A1902 Hand Protection Posters
<input type="checkbox"/>	A1740 Wind-Up Machine	<input type="checkbox"/>	A1794 Poly Phosphate Comparator	<input type="checkbox"/>	A1848 Pop Valves	<input type="checkbox"/>	A1903 Steam Generators
<input type="checkbox"/>	A1741 Refractories	<input type="checkbox"/>	A1795 Thermometers & Hydrometers	<input type="checkbox"/>	A1849 Fatty Acids	<input type="checkbox"/>	A1904 Temperature Controls
<input type="checkbox"/>	A1742 Feed Systems	<input type="checkbox"/>	A1796 Thermometers	<input type="checkbox"/>	A1850 Reagents for Gas Analysis	<input type="checkbox"/>	A1905 Pyrogen Retentive Filters
<input type="checkbox"/>	A1743 Processing Equipment	<input type="checkbox"/>	A1797 Laboratory Furniture	<input type="checkbox"/>	A1851a Yeast Adenylic Acid	<input type="checkbox"/>	A1906 Stainless-Steel Floats
<input type="checkbox"/>	A1744 Regalvanizing Process	<input type="checkbox"/>	A1798 Laboratory Ovens	<input type="checkbox"/>	A1851b Adenine	<input type="checkbox"/>	A1907 Acid Hoods
<input type="checkbox"/>	A1745 Wedge-Slot Screens	<input type="checkbox"/>	A1799 Tank Gauges	<input type="checkbox"/>	A1852 Storage Bins	<input type="checkbox"/>	A1908 Lighting Equipment
<input type="checkbox"/>	A1746 Lift Trucks	<input type="checkbox"/>	A1800 Visible Recording	<input type="checkbox"/>	A1853 Nickel-base Alloys	<input type="checkbox"/>	A1909 Processing Equipment
<input type="checkbox"/>	A1747 Magnetic Separators	<input type="checkbox"/>	A1801 Polarograph	<input type="checkbox"/>	A1854 Jar Rolling Machines	<input type="checkbox"/>	A1910 Mechanical U-tube Meters
<input type="checkbox"/>	A1748 Electric Motors	<input type="checkbox"/>	A1802 Lighting Equipment	<input type="checkbox"/>	A1855 Sectional Heat Exchangers	<input type="checkbox"/>	A1911 Counting Machines
<input type="checkbox"/>	A1749 Electronic Generator	<input type="checkbox"/>	A1801 Pressure Reducing Valves	<input type="checkbox"/>	A1856 Acid-Handling Pumps	<input type="checkbox"/>	A1912 Pipeline Strainers
<input type="checkbox"/>	A1750 Industrial Cleaning	<input type="checkbox"/>	A1802 Motor Analyzer & Test Bench	<input type="checkbox"/>	A1857 Couplings	<input type="checkbox"/>	A1913 Autoclave
<input type="checkbox"/>	Compounds	<input type="checkbox"/>	A1803 Laboratory Furniture	<input type="checkbox"/>	A1858 Steel Grating	<input type="checkbox"/>	A1914 Eye Shields
<input type="checkbox"/>	A1751 Filters	<input type="checkbox"/>	A1804 Thermometers	<input type="checkbox"/>	A1859 Stainless-clad Steel	<input type="checkbox"/>	A1915 Flexible Shafting
<input type="checkbox"/>	A1752a Micro-Pulverizer	<input type="checkbox"/>	A1805 Electric Furnaces	<input type="checkbox"/>	A1860 Power Drives	<input type="checkbox"/>	A1916 Pumps
<input type="checkbox"/>	A1752b Micro-Atomizer	<input type="checkbox"/>	A1806 Electronic Motor Controls	<input type="checkbox"/>	A1861 Steam Traps	<input type="checkbox"/>	A1917 Lighting Equipment
<input type="checkbox"/>	A1753 Steam Turbines	<input type="checkbox"/>	A1807 Pushbuttons	<input type="checkbox"/>	A1862 Elevator Buckets	<input type="checkbox"/>	A1918 Air Cleaner
<input type="checkbox"/>	A1754 "Foamglas" Insulation	<input type="checkbox"/>	A1808 Laboratory Ovens & Plates	<input type="checkbox"/>	A1863 Tube Cleaners	<input type="checkbox"/>	A1919 Industrial Trucks
<input type="checkbox"/>	A1755 Gas Purifier	<input type="checkbox"/>	A1809 Solenoid Valves	<input type="checkbox"/>	A1864 Vacuum Pumps	<input type="checkbox"/>	A1920 Stainless-Steel Valves
<input type="checkbox"/>	A1756 Mixing Equipment	<input type="checkbox"/>	A1810 Vacuum Gauges	<input type="checkbox"/>	A1865 Photocopy Equipment	<input type="checkbox"/>	A1921a Handling Bulletin No. 4
<input type="checkbox"/>	A1757a Level Control	<input type="checkbox"/>	A1811 Rheostats & Resistors	<input type="checkbox"/>	A1866 Steam Generators	<input type="checkbox"/>	A1921b Handling Bulletin No. 10
<input type="checkbox"/>	A1757b Interval Timers	<input type="checkbox"/>	A1812 Ratio Flow Controller	<input type="checkbox"/>	A1867 Organic-detergent	<input type="checkbox"/>	A1922 1/4 Ton Hoist
<input type="checkbox"/>	A1758 Sulfur & Carbon Testers	<input type="checkbox"/>	A1813 Pneumatic Transmission	<input type="checkbox"/>	A1868 Power Shovels	<input type="checkbox"/>	A1923 Machine Screws
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<input type="checkbox"/>	A1760 Pop-Relief Valves	<input type="checkbox"/>	A1815 Abrasers	<input type="checkbox"/>	A1870 Steam Traps	<input type="checkbox"/>	A1925 Truck Type Tray Dryers
<input type="checkbox"/>	A1761 Abraser	<input type="checkbox"/>	A1816 Portable Pyrometer	<input type="checkbox"/>	A1871 Apron Conveyors	<input type="checkbox"/>	A1926 Gyration Screens
<input type="checkbox"/>	A1762 Laboratory Furnace	<input type="checkbox"/>	A1817 Tumble Jars	<input type="checkbox"/>	A1872 Book — Plastics	<input type="checkbox"/>	A1927 Vacuum Pumps
<input type="checkbox"/>	A1763 Timers & Level Controls	<input type="checkbox"/>	A1818 Sub-Zero Units	<input type="checkbox"/>	A1873 Synthetic Rubber Gloves	<input type="checkbox"/>	A1928 Metal Bellows
<input type="checkbox"/>	A1764 Manometers	<input type="checkbox"/>	A1819 Automatic Controls	<input type="checkbox"/>	A1874 Mineral medium	<input type="checkbox"/>	A1929 Immersion Tank Heaters
<input type="checkbox"/>	A1765 Ohmmeters	<input type="checkbox"/>	A1820 Rotameters	<input type="checkbox"/>	A1875 Precision Bore Tubing	<input type="checkbox"/>	A1930 Processing Equipment
<input type="checkbox"/>	A1766 Time Delay Relays	<input type="checkbox"/>	A1821 Rheostats	<input type="checkbox"/>	A1876 Steel Grating	<input type="checkbox"/>	A1931 Pipeline Strainers
<input type="checkbox"/>	A1767 Level Control	<input type="checkbox"/>	A1822 Controls	<input type="checkbox"/>	A1877 Fluorochemistry	<input type="checkbox"/>	A1932 Glass Tanks
<input type="checkbox"/>	A1768 Electronic Controllers	<input type="checkbox"/>	A1823 Air Processing Systems	<input type="checkbox"/>	A1878 Pumps	<input type="checkbox"/>	A1933 Water Stills
<input type="checkbox"/>	A1769 Metal Detectors	<input type="checkbox"/>	A1824 X-Ray Diffraction Units	<input type="checkbox"/>	A1879 Overhead Handling	<input type="checkbox"/>	A1934 Safety Cans
<input type="checkbox"/>	A1770 Thermometers	<input type="checkbox"/>	A1825 Polarizer	<input type="checkbox"/>	A1880 Power Plant Guide	<input type="checkbox"/>	A1935 Vibrating Screens
<input type="checkbox"/>	A1771 Instruments	<input type="checkbox"/>	A1826 Control Valves	<input type="checkbox"/>	A1881 Tube Cleaners	<input type="checkbox"/>	A1936 Aluminum Equipment
<input type="checkbox"/>	A1772 Laboratory Furniture	<input type="checkbox"/>	A1827 Glass Piping	<input type="checkbox"/>	A1882a Liquid Pumps	<input type="checkbox"/>	A1937 Roller Markers
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<input type="checkbox"/>	A1774 Liquid Level Controls	<input type="checkbox"/>	A1829 Tetrahydrofurfuryl Alcohol	<input type="checkbox"/>	A1883 Pumps	<input type="checkbox"/>	A1939 Pumps
<input type="checkbox"/>	A1775 Surface Pyrometers	<input type="checkbox"/>	A1830 Pentamethylenediol — 2, 4	<input type="checkbox"/>	A1884 Air Separator	<input type="checkbox"/>	A1940 Recording Feeders
<input type="checkbox"/>	A1776 Speed Indicators	<input type="checkbox"/>	A1831a Carbonic Gas	<input type="checkbox"/>	A1885 Blast-gate Valves	<input type="checkbox"/>	A1941 Flexible Metal Hose
<input type="checkbox"/>	A1777 Combustion Tubes	<input type="checkbox"/>	A1831b Dry Ice	<input type="checkbox"/>	A1886 Humidity Controls	<input type="checkbox"/>	A1942 Crane Power Unit
<input type="checkbox"/>	A1778 Pocket Voltage Tester	<input type="checkbox"/>	A1832 Colloidal Graphite	<input type="checkbox"/>	A1887 Alloy Equipment	<input type="checkbox"/>	A1943 Industrial Ovens
<input type="checkbox"/>	A1779 Pressure Controller	<input type="checkbox"/>	A1833 Ethyl-Alpha-Oxalpropionate	<input type="checkbox"/>	A1888 Eye Ease Color System	<input type="checkbox"/>	A1944 Cloth Tape
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<input type="checkbox"/>	A1783 Laboratory Cabinets	<input type="checkbox"/>	A1837 Electric Rust Preventive*	<input type="checkbox"/>	A1892 Clamps & Fittings	<input type="checkbox"/>	A1948 Colloid Mills
<input type="checkbox"/>	A1784 Magnetic Comparator	<input type="checkbox"/>	A1838 Alundum Laboratory Ware	<input type="checkbox"/>	A1893 Rotary Pressure Joints	<input type="checkbox"/>	A1949 Dust Collectors

Mail to CHEMICAL PREVIEW, 737 N. Michigan Ave., Chicago 11, Illinois

MORE PRODUCT INFORMATION  
Check products which interest you, mail to us.

If you wish

# If You Wish More Information On Products--

See Reverse Side of this Sheet --- Be Sure To Give Your Address

(Listing of products continued)

MAY-JUNE, 1945

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<input type="checkbox"/>	A1950 Diatomaceous Earth Filters	<input type="checkbox"/>	A1994 Plastic Piping	<input type="checkbox"/>	A2039 Corrosion Resistant Equipment	<input type="checkbox"/>	A2081 Truck Battery Charger
<input type="checkbox"/>	A1951 Drum Up-Ending Truck	<input type="checkbox"/>	A1995 Dust Collectors	<input type="checkbox"/>	A2040 Infrared Equipment	<input type="checkbox"/>	A2082 Hardness Check Set
<input type="checkbox"/>	A1952 Worm Gear Speed Reducers	<input type="checkbox"/>	A1996 High Frequency Generators	<input type="checkbox"/>	A2041 Agitating Equipment	<input type="checkbox"/>	A2083 Chemical Feeders
<input type="checkbox"/>	A1953 Fork Trucks	<input type="checkbox"/>	A1997 Industrial Coatings	<input type="checkbox"/>	A2042 Scales	<input type="checkbox"/>	A2084 Pumps
<input type="checkbox"/>	A1954 Mikro-Atomizer	<input type="checkbox"/>	A1998 Air Motors	<input type="checkbox"/>	A2043 Dust Collectors	<input type="checkbox"/>	A2085 Steel Strapping
<input type="checkbox"/>	A1955 Chromate Gaskets	<input type="checkbox"/>	A1999 Diaphragm Slurry Pumps	<input type="checkbox"/>	A2044 Adjustable Speed Drives	<input type="checkbox"/>	A2086 Horizontal Plate Filters
<input type="checkbox"/>	A1956 V-Belts	<input type="checkbox"/>	A2000 Stainless-Clad Steel	<input type="checkbox"/>	A2045 Steam Traps	<input type="checkbox"/>	A2087 Diaphragm Valves
<input type="checkbox"/>	A1957 Fire Extinguishers	<input type="checkbox"/>	A2001 Direct-Connect Coupling	<input type="checkbox"/>	A2046 Linseed Varnish Oil	<input type="checkbox"/>	A2088 Transmission Unit
<input type="checkbox"/>	A1958 Magnetic Separators	<input type="checkbox"/>	A2002 Jacketed Pipe & Fittings	<input type="checkbox"/>	A2047 Ultraviolet Lamp	<input type="checkbox"/>	A2089 Electronic Induction Heaters
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<input type="checkbox"/>	A1960 Spray Nozzles	<input type="checkbox"/>	A2004 Syrup Line Valve	<input type="checkbox"/>	A2049 Wedge Gate Valves	<input type="checkbox"/>	A2091 Barometric Condenser
<input type="checkbox"/>	A1961 Dust Collectors	<input type="checkbox"/>	A2005 Refrigerant Oil Trap	<input type="checkbox"/>	A2050 Ball-Bearing Swivels	<input type="checkbox"/>	A2092 Centrifugal Pumps
<input type="checkbox"/>	A1962 Indirect Air Heater	<input type="checkbox"/>	A2006 Handling Equipment	<input type="checkbox"/>	A2051 Spout Type Magnets	<input type="checkbox"/>	A2093 Mixers
<input type="checkbox"/>	A1963 Dust Collectors	<input type="checkbox"/>	A2007 Steel & Alloy Equipment	<input type="checkbox"/>	A2052 Fixtures & Fittings	<input type="checkbox"/>	A2094 Nickel Alloys
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<input type="checkbox"/>	A1965 Steam-Hydraulic Press	<input type="checkbox"/>	A2009 Glass Filter Medium	<input type="checkbox"/>	A2054 Starting Coils	<input type="checkbox"/>	A2096 Boxboard Tester
<input type="checkbox"/>	A1966 Mortars & Pestles	<input type="checkbox"/>	A2010 Rolls	<input type="checkbox"/>	A2055 Shop Coats	<input type="checkbox"/>	A2097 Capacitors
<input type="checkbox"/>	A1967 Stainless Steel Tanks	<input type="checkbox"/>	A2011 Double Conveyor Oven	<input type="checkbox"/>	A2056 Spats & Leggings	<input type="checkbox"/>	A2098 Essential Oils
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<input type="checkbox"/>	A1969 Gate Valves	<input type="checkbox"/>	A2013 Water-Fog Sprinklers	<input type="checkbox"/>	A2058 Propellers	<input type="checkbox"/>	A2100 Protective Creams
<input type="checkbox"/>	A1970 Vacuum Pumps	<input type="checkbox"/>	A2014 Roller Chains	<input type="checkbox"/>	A2059 Blue Sealers	<input type="checkbox"/>	A2101 Gears
<input type="checkbox"/>	A1971 Suction Units	<input type="checkbox"/>	A2015 Counterbores	<input type="checkbox"/>	A2060 Blueprint Cabinets	<input type="checkbox"/>	A2102 Feed Water Heaters
<input type="checkbox"/>	A1972 Ovens	<input type="checkbox"/>	A2016 Handling Buckets	<input type="checkbox"/>	A2061 Barrel Trucks	<input type="checkbox"/>	A2103 Industrial Trucks
<input type="checkbox"/>	A1973 Bag Closers	<input type="checkbox"/>	A2017 Plastic Processing Units	<input type="checkbox"/>	A2062 Neoprene Gloves	<input type="checkbox"/>	A2104 Laboratory Glassware
<input type="checkbox"/>	A1974 Packaging Scales	<input type="checkbox"/>	A2018 Gas Pumps	<input type="checkbox"/>	A2063 10 In. Precision Lathe	<input type="checkbox"/>	A2105 Solenoid Valves
<input type="checkbox"/>	A1975 Corrosion-proof Equipment	<input type="checkbox"/>	A2019 High Frequency Units	<input type="checkbox"/>	A2064 Liquid Mixer	<input type="checkbox"/>	A2106 Defrosting Units
<input type="checkbox"/>	A1976 Spray Nozzles	<input type="checkbox"/>	A2020 Vibrating Screens	<input type="checkbox"/>	A2065 Dust Collector	<input type="checkbox"/>	A2107 Resistors
<input type="checkbox"/>	A1977 Stainless-Steel Castings	<input type="checkbox"/>	A2021 Dewatering Press	<input type="checkbox"/>	A2066 Drainrol	<input type="checkbox"/>	A2108 Motors Catalog
<input type="checkbox"/>	A1978 Fire Fighting Foam	<input type="checkbox"/>	A2022 Centralized Lubrication	<input type="checkbox"/>	A2067 Wire Cloth	<input type="checkbox"/>	A2109 Filter Press Closers
<input type="checkbox"/>	A1979 Asbestos Fabrics	<input type="checkbox"/>	A2023 Kettles	<input type="checkbox"/>	A2068 Fastenings	<input type="checkbox"/>	A2110 Metal Stampings
<input type="checkbox"/>	A1980 Cork-Filled Tape	<input type="checkbox"/>	A2024 Rotary Pumps	<input type="checkbox"/>	A2069 Detachable Hose Flange	<input type="checkbox"/>	A2111 Heating Coils
<input type="checkbox"/>	A1981 Screw Conveyors	<input type="checkbox"/>	A2025 Panel Mounting Pushbuttons	<input type="checkbox"/>	A2070 Lubricating Equipment	<input type="checkbox"/>	A2112 Heat Exchangers
<input type="checkbox"/>	A1982 Electric Stills	<input type="checkbox"/>	A2026 Platform Scales	<input type="checkbox"/>	A2071 Gyration Screens	<input type="checkbox"/>	A2113 Flashlight Storage Batteries
<input type="checkbox"/>	A1983 Pumps	<input type="checkbox"/>	A2027 Lighting Equipment	<input type="checkbox"/>	A2072 Filter Press	<input type="checkbox"/>	A2114 Casters
<input type="checkbox"/>	A1984 Input Controllers	<input type="checkbox"/>	A2028 Hydraulic Presses	<input type="checkbox"/>	A2073 Compressed Air Dryer	<input type="checkbox"/>	A2115 Plug Valves
<input type="checkbox"/>	A1985 Gate Valves	<input type="checkbox"/>	A2029 Conveyor-Elevator Systems	<input type="checkbox"/>	A2074 Butterfly Valves	<input type="checkbox"/>	A2116 Safety Interlocks
<input type="checkbox"/>	A1986 Filter Stations	<input type="checkbox"/>	A2030 De-Ionizing Units	<input type="checkbox"/>	A2075 Face Shields	<input type="checkbox"/>	A2117 Heat Transfer Equipment
<input type="checkbox"/>	A1987 Sodium Tetraphosphate Beads	<input type="checkbox"/>	A2031 Instant Heaters	<input type="checkbox"/>	A2076 Multiwall Paper Bags	<input type="checkbox"/>	A2118 Spout Magnets
<input type="checkbox"/>	A1988 Car Puller	<input type="checkbox"/>	A2032 Vibrating Feeders	<input type="checkbox"/>	A2077 Dial Scales	<input type="checkbox"/>	A2119 Floor Patch
<input type="checkbox"/>	A1989 Vertical Doors	<input type="checkbox"/>	A2033 Centrifugal Pumps	<input type="checkbox"/>	A2078 "Worthite" Super Stainless	<input type="checkbox"/>	A2120a Steam Traps
<input type="checkbox"/>	A1990 Packing Pullers	<input type="checkbox"/>	A2034 Plastic Pipe & Fittings	<input type="checkbox"/>	A2079a Plastic Mats	<input type="checkbox"/>	A2120b Control Valves
<input type="checkbox"/>	A1991 Carton Stickers	<input type="checkbox"/>	A2035 Refrigeration Parts	<input type="checkbox"/>	A2079b Wood Link Mats	<input type="checkbox"/>	A2121 Dust Collectors
<input type="checkbox"/>	A1992 Laboratory Equipment	<input type="checkbox"/>	A2036 Steam Set Ink Binder	<input type="checkbox"/>	A2080 High Frequency Unit	<input type="checkbox"/>	A2122 Screw Conveyors
<input type="checkbox"/>	A1993 Pumps	<input type="checkbox"/>	A2038 Carboy Drainer			<input type="checkbox"/>	4th Cover Chemical Porcelain

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problem. See page 54.

## How To

If you are particularly inte  
 turn first to the Directory o  
 9-100. Here is an alphabet  
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 to browse through the rest  
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## How To Get Th

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PATTERSON-KELLEY  
Heat Exchangers  
AND  
Process Equipment

## Designing YOUR OWN KETTLE?

Check Your Design Against A.S.M.E.  
Requirements, for example . . .



● A.S.M.E. or A.P.I. inspections are tough — not unfair but insistent upon "safety" in the design of pressure vessels and rightly so because human beings as well as property are involved. So study your codes. With kettles, for example, watch that you do not locate openings or supports on or too close to a head knuckle. Set nozzles and mixer shaft stuffing boxes so that they are easy to service. In other words, make them accessible.

In our many years of service to industry designing and making pressure vessels . . . and in helping users design their own units . . . we find that too much attention cannot be given to these details.

If you have started on the design of the pressure vessels you need, why not let one of our engineers check for possible conflictions? If you are only in the "planning" stage, why not let us take over the design? We know pressure vessel codes and how to meet them and yet produce the unit needed to take care of the desired processing.



**THE PATTERSON-KELLEY**  
Company, Inc.

Main Office and Factory

120 WARREN STREET, EAST STROUDSBURG, PA.

BOSTON 16, 96-A Huntington Avenue • NEW YORK 17, 101 Park Avenue

PHILADELPHIA 3, 1700 Walnut Street • CHICAGO 4, Railway Exchange Building

Representatives in All Principal Cities

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When inquiring specify CP A1784 — see information request blank, pgs. 2-3

# CHEMICAL PREVIEW

Edited for Production and Laboratory  
Men in the Chemical Process Industries

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Products	Equipment Mfrs.	Soap and Cleaning
Coke Oven Products	Paint and Varnish	Compounds
Composition Mate-	Paper and Pulp	Stone, Clay & Glass
rials, Fibre, etc.	Petroleum Refining	Products
Drugs, Cosmetics &	and Products	... and Allied Lines
Pharmaceuticals	Plastics, Cellulose,	(Carbon, Glue, Oils,
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In producing penicillin, Commercial Solvents Inc. uses four L&N pH Indicators like the one above. Dependability is this Indicator's chief quality. It is accurate when new, and it stays accurate. It's also easy to use, easy to carry about, and entirely suitable for hot, humid control labs or for processing departments. At \$16.00 this Indicator No. 7662 is an economical tool for any chemical lab. Catalog E-96(2) on request.



LEEDS & NORTHRUP CO., 4995 STENTON AVE., PHILA., 44, PA.

LEEDS & NORTHRUP

MEASURING INSTRUMENTS • TELEMETERS • AUTOMATIC CONTROLS • HEAT-TREATING FURNACES

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When inquiring specify CP A1735 — see information request blank, pgs. 2-3

## ALVEY-FERGUSON Conveyors



THIS Alvey-Ferguson barrel chain conveyor installation is another example of more efficient product handling by means of endless-stream A-F Scientifically Planned Conveyors. If you have an "indoor transportation" problem write today and our engineers will help you solve it. Or write for new conveyor catalog showing all types of A-F Conveyors in war production plants.

THE ALVEY-FERGUSON COMPANY, 15 Disney Street, Cincinnati, Ohio

When inquiring specify CP A1730 — see information request blank, pgs. 2-3



## Sealants Provide Complete 3-Dimensional Permeation of Castings

Recently developed casting sealants make a complete, three dimensional permeation of castings, filling the millions of microscopic hollows which they contain without changing their appearance or affecting precision tolerances. After being impregnated, the castings are heat treated to change the impregnant from a liquid to a rubbery solid form. This development eliminates dependency upon tung oil for such impregnation requirements. This series of sealants which are identified as being of the Thalid X100 series are special adaptations of a family of polyster type resins used in low pressure lamination to all but eliminate size as a limiting factor in the plastics industry. A plastic bathtub, for example, will be made by fitting a textile coat to the mold (in this instance it might be a conventional bathtub) impregnating it with the resin and baking it for about ten minutes after the center of the laminate reaches the temperature of boiling water. Color could be utilized in many products produced by this method as bright fabric would show through the transparent plastic. (Monsanto Chemical Co.)

## Future Automobiles May Utilize Radio for Spark Control

The super-automobiles to come seem to be one of the most popular subjects in general discussions of post-war wonders. Ninety octane non-premium gas and radio type spark control are interesting possibilities. This suggested use of radio also invites speculation on the long dreamed of transmission of power by radio. A Soviet report describes operation of a factory one ton vehicle by high frequency current picked up from wires laid underground.

## Rayon Gets Permanent Wave in Reverse

A new electric de-kinking process is now being employed to rid rayon of its tendency to curl, permitting its use in weftless form (without cross woven cords) in the carcass of heavy duty truck tires. Spools of the rayon are put through an electronic oven, receiving what might be termed the opposite of a permanent wave. (B. F. Goodrich Co.)

## **Stirring Member Inside Container Has No Direct Connection With Power Source**

A motor driven stirring device in which the stirring member inside the container has no direct connection to the power source has been patented. A small motor carrying a permanent magnet on the end of the shaft is mounted under the container. A small bar magnet covered with glass, plastic or rubber to prevent chemical reaction is placed on the bottom of the container, and as the motor revolves so does the bar magnet.

## Sensitive Ration Stamp Scale Features a Lot of Good Points

A scale recently designed especially for counting ration stamps is so sensitive that it should prove very useful in many applications. The scale is available for weighing in either grams or grains and has a capacity of 1500 grains. Graduations are as fine as 2 grains or 0.2 grams. A very desirable feature is the unusual rapidity with which the indicator comes to rest. There is a wide choice of charts and equipment and a carrying case provides for protection and portability.

## Bamboo Pipe Lines Carry Salt From Chinese Mines 2000 Years Old

Salt mines in China more than 2000 years old furnish all the salt for more than one fourth of all free China. Huge bamboo pipe lines run from salt wells to refineries. More than three hundred thousand laborers are kept constantly busy in these operations.

## Army Hard Water Soap Assured of Steady Job In Post-War Era

The hard water soap perfected for Army use will find a welcome among many post-war users. It works well with cold water. The important factor is a sulfonated product developed from petroleum. When the soap combines with hard water minerals the result is a finely dispersed precipitate instead of a heavy curd.

(Continued on page 103)

# Devine

## HEAT EXCHANGERS



**For Your Important Heat Transfer Operations**

Thoroughly experienced in the problems of heat transfer throughout industry, Devine Engineers are prepared to design units specifically engineered for any particular heat-exchanging operation. Built in an up-to-date plant by expert workmen with every modern facility at their disposal, Devine Heat Exchangers achieve an unusually high degree of efficiency and mechanical simplicity. Low initial investment and minimum maintenance costs are characteristic of Devine Equipment. If you have a heat transfer problem, Devine Engineers will help you solve it.



**J. P. DEVINE Division**

**H. K. PORTER COMPANY, Inc.**

-When inquiring specify CP A1737 . . . see information request blank, pgs. 2-3

## Specify **POTTSTOWN** POSITIVE DISPLACEMENT **ROTARY BLOWERS AND EXHAUSTERS**

**Designed and**  
sturdily built to give  
you long, trouble-  
free service—even  
under daily 24-hour  
operation. Impellers do not touch each other or  
casing wall—no wearing parts—no internal lub-  
rication. Constant volume regardless of varying  
pressure . . . high volumetric efficiency . . . min-  
imum maintenance expense.



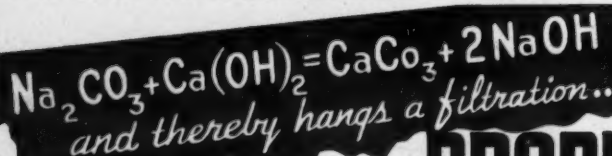
If you require constant pressure  
at all volumes, specify Allen  
Billmyre centrifugal type Turbo  
Blowers and Exhausters—for  
real economy.

Write today for new  
Bulletin No. P-100

ALLEN BILLMYRE COMPANY, 445 Fayette Ave., Monaca, N. Y.

# ALLEN BILLMYRE

When inquiring specify CP A1738—see information request blank, pgs. 2-3



## PROBLEM:

The recovery of Caustic Soda from  
Sodium Carbonate Solution by  
Treatment with Lime.

### THE FACTORS:

There's no problem in a chemical equation that SYMBOLS can't solve, but the actual  
filtration cycle (as one very important chemical manufacturer learned) was not so easy.—  
The crux of the matter was to recover the sodium values as hydroxides for reuse at the  
head of the chemical process and to recover calcium carbonate in a form suitable for  
agricultural liming and other end uses.

### "N. F. E." SOLVED THIS PROBLEM

The flexibility—the tailored-to-your-problem design—of Niagara Filter Systems: (with  
the exclusive patented "Fullo" leaf) solved this problem of calcium carbonate and sodium  
hydroxide recovery.

### AN ALL MONEL NIAGARA FILTER UNIT NOW . . .

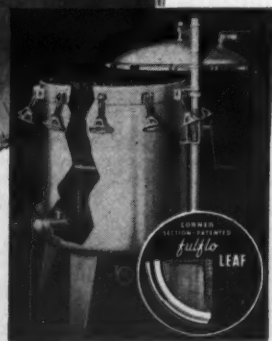
1. Simplifies the filtration and recovery cycle
2. Necessitates only the part-time services of one man
3. Increases good housekeeping—eliminates waste

Additional details and information concerning this very unusual  
filtration problem will gladly be furnished upon request.

**niagara filter CORPORATION**  
3090 MAIN STREET AMHERST 1510 BUFFALO 14, N. Y.

Filtration Engineers to the Chemical & Food Processing Industries

Write for the full story of  
this Case History, and send  
your problem—or prob-  
lems—to Engineered Fil-  
tration Headquarters (there  
is no charge or obligation  
for this service).



When inquiring specify CP A1739 . . . see information request blank, pgs. 2-3

## New Solutions of Plant Problems

The solutions here given are selected because of their ideas in the application of available equip-  
ment or materials to overcoming certain tough plant problems. Many of these suggest basic  
ideas applicable in kindred or very different problems of process production.

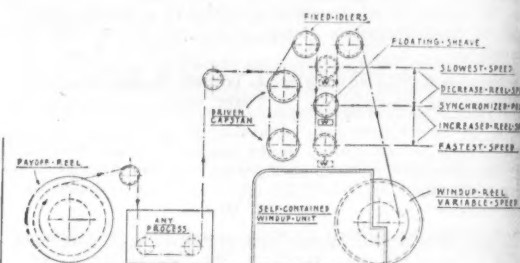
### Constant Tension and Speed Wind- Up of Continuous Materials

*Machines used for surgical sutures, shade cloth wire*

**Problems**—In processing continuous materials such as  
surgical sutures, varnish cambric, shade cloth and coated  
fabrics smooth controlled tension is essential, without  
steps, pulsations or jerks upon the material being wound.  
Some materials require a tight wrap, others a loose wrap  
but in any case tension must be maintained throughout  
the roll. It is also desirable to be able to increase or de-  
crease wind-up speeds during operation without varying  
the tension on the material or if required to increase or  
decrease the tension during operation if desired.

**Solutions**—A constant speed, constant tension wind-up  
machine widely used in wire and cable processing is  
equally well adapted for many other materials. The  
processing of sutures is relatively the same as that of pro-  
cessing insulated cable, in that the suture regardless of type  
is handled through a multi-pass impregnation and surface  
coating. Normally with surgical sutures, the material has  
relatively little tensile and the build-up in the wipers is

sufficient to cause a reduction in diameter due to extreme  
wiper tension on the material. Likewise an installation of  
this wind-up unit for sutures would be equipped with  
assisting capstan interposed in the actual coating system to  
act as a synchronized helper drive throughout the system.  
This acts primarily to reduce the tension per coat. Due to  
the extreme sensitivity of the unit and the hydraulic  
smoothness, tension in the coating system as well as in  
the final wind-up on the reel spool, roll or reel is very  
carefully and accurately determined. In the processing of  
varnish cambric, most standard processes involve the use  
of a dipping and scraping system, a festoon type drive  
and take-up equipment. Here, too, assisting capstans may  
synchronously driven helper rolls are interposed in the  
system to give additional pull to the fabric, reducing the  
fabric tension for reduction in tendency to neck or stretch.  
The same advantages are obtained with shade cloth and  
coated fabrics.



SYSTEM FOR CONTROLLED WIND-UP

**Results**—Wind-up accomplished smoothly, tension of  
material wound on reel, core or drum is held up to very  
close tolerance at any point within a wide operating range.

**Description**—Standard equipment consists of a single  
machine, complete with a self-contained power unit, multi-  
wrap capstan or drive rolls, tension and speed adjusting  
mechanism, adjustable synchronized traversing mechanism,  
demountable reel or drum shaft and hydraulic or electro-  
nic speed control. It is equipped with drive and pul-  
leys to wind continuous materials on a reel, spool or core.  
By building a power take-off into the machine, a synchro-  
nized helper drive to other portions of the processing unit  
may be utilized without the need for separate synchroniza-  
tion speed control units or drives. Accompanying drawing  
shows a friction unwind constant-speed, constant tension  
wind-up system. From the capstan the material is fed  
over a fixed idler sheave and upward to another fixed  
idler sheave. From this idler the material goes through  
an adjustable and stroke traversing unit and thence to the  
reel or spool on which it is being wound. Letters A and  
B represent maximum and minimum travel of compen-  
sator sheave or roll, the float sheave usually centering  
somewhere the midpoint of these two positions. Tension  
is indicated by weight "W", and by varying the weight  
either by counterweight or air pressure, tension can be  
varied as required. Complete information on request.

INDUSTRIAL OVEN ENGINEERING CO., Dept. CP,  
Cleveland 2, Ohio.

When inquiring specify CP A1740—see information request blank, pgs. 2-3

CHEMICAL PREVIEW



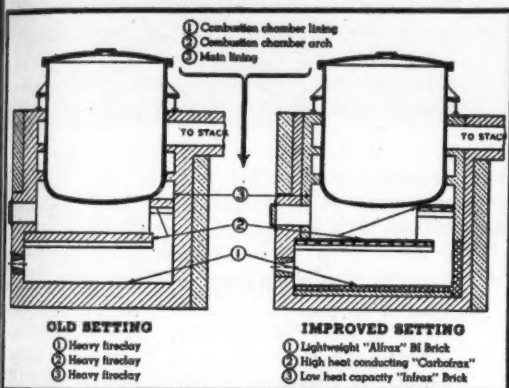
## New Solutions

### Super Still Setting Refractories

quick and responsive operation, easy heating, fast temperature cut-off; longer kettle and setting life, low maintenance costs

**Problem** — More efficient still operation is sought through better setting. Close control of temperature is difficult to obtain because of heavy firebrick arch in combustion chamber; main lines relatively slow in releasing their absorbed heat. Also, a high heat-in-put was necessary to bring the still up to temperature in a reasonable time and this condition, when many refractories are used, results in short life from both kettle and setting.

**Solution** — In replacement operations bonded silicon carbide refractories containing 85% or more SiC in the finished state are used in the arches. In order to secure full advantage of the high thermal conductivity of these "Carbofrax" refractories thin tile, as indicated in drawing, is used in arch construction. "Alfrax B1" (A group of



#### FIRECLAY AND SUPER REFRACTORY SETTINGS

Refractories composed of special type of fused aluminum oxide providing large percentage of pores in finished material and possessing light weight and low heat capacity) is used for the combustion chamber lining. These brick have great load bearing capacity and effective insulating value even at excessive temperatures. Upper lining is formed of "Infrax," a kaolin base insulating light weight insulating firebrick. Weight standard 9 in. brick, 3 lbs.

**Results** — Operation of still is quicker and more responsive. It is easy to heat and temperature cut-off is fast. Because of operation with lower heat-in-put, kettle and setting give longer life. These refractories can likewise be incorporated in other designs of settings to achieve similar advantages.

CARBORUNDUM CO., Dept. CP, Perth Amboy, N. J.

When inquiring specify CP A1741 — see information request blank, pgs. 2-3

Has a recent use of your equipment solved a difficult chemical plant problem? The equipment may be new or from your standard line. For publication, data should state definitely (1) Nature of operation in question, i.e., cooking, cooling, mixing; (2) Difficulties involved such as control of temperature, product uniformity, lubrication or cleaning; (3) How was equipment used — in standard or modified form? (4) Results, facts on savings in time, labor, increased production or similar cost factors or extent of product improvement. Address the Editors.

#### CHEMICAL PREVIEW

737 N. Michigan

Chicago 11, Ill.

## MILTON Roy CHEMICAL FEED SYSTEMS



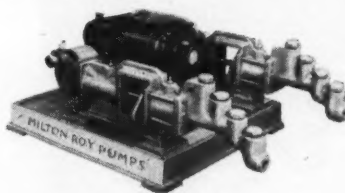
### "Packaged" Units now available for all boiler water treatments

This bulletin tells how to protect your boilers against corrosion and pitting . . . prevent scale, control alkalinity, remove dissolved oxygen.

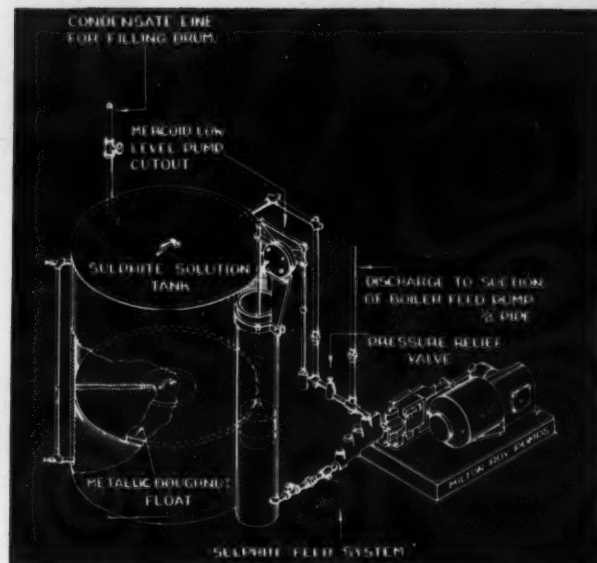
It explains why two distinct systems are recommended for feeding Sodium Sulfite and other chemicals.

It describes simple, "Packaged" units . . . complete chemical feed systems . . . to meet all steaming requirements, to inject treating chemicals without waste, in exact, predetermined quantities.

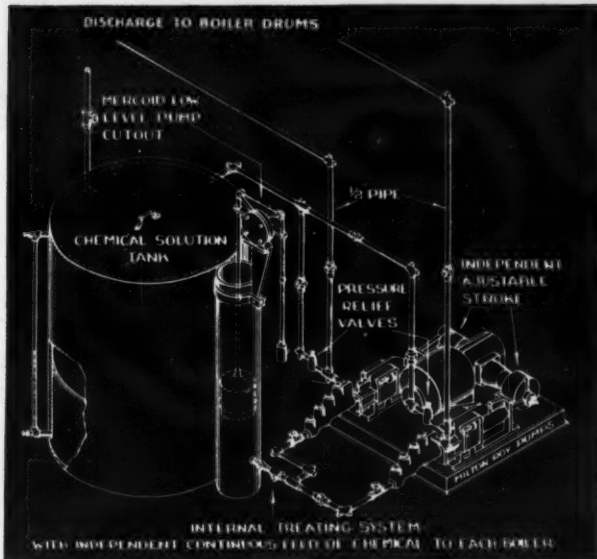
This bulletin is "must" reading for every power plant operating engineer. Send for it.



## MILTON Roy PUMPS



Showing how Sodium Sulfite should be fed. The bulletin describes the Milton Roy unit to do it . . . shows how to select the unit of correct capacity.



Milton Roy has made it easy to select and install boiler water treating systems . . . as easy as the purchase of any other piece of equipment.



1310 E. Mermaid Ave., Chestnut Hill - Philadelphia, 18, Pa.

When inquiring specify CP A1742 . . . see information request blank, pgs. 2-3

## New Solutions

### Regalvanizing Welded Joints in Galvanized Sheets

*Process makes possible arc, gas, welding in place of riveting and soldering*

**Problem** — In production of many products utilization of galvanized sheet metal, because of its many advantages, has been desired. Truly economical and practical means of arc and gas welding in place of riveting and soldering have been awaited. Limitations on use of mill hot-dipped and electro-galvanized sheets have been imposed by drawbacks of regalvanizing welded seams and joints in galvanized sheet, plate and pipe.

**Solution** — Process has been developed which makes it possible to regalvanize welded seams and joints with excellent results. The effectiveness of this method has already been proven in the ship-building industry and makes available to designers for postwar uses the advantages of an all-welded galvanized steel construction providing complete protection against rust and corrosion at the point of weld. The process is not confined to sheet metal work alone, having applications in many industries. One example of its use is in underground storage tanks, making painting unnecessary and offering great resistance to soil corrosion. Various types of equipment in oil, meat packing, rendering and process industries can employ this method. Structures formerly requiring hot dip galvanizing after full or partial fabrication may now be constructed from mill galvanized sheets and strips. Galvanized piping may also be welded to provide leakproof and rust free construction not always attained by threaded joint.

**Results** — Removes limitations on use of galvanized construction for wide range of products. Offers economies in production of various structures and permits easy and reliable method of repairing rejects that would otherwise have to be stripped and re-dipped. Will offer

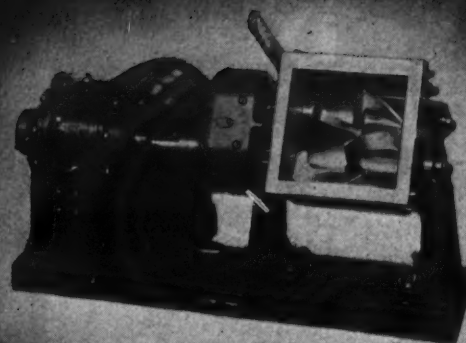
For more information on product at right, specify CP A1743 . . . see information request blank between pages 2-3.

# READCO

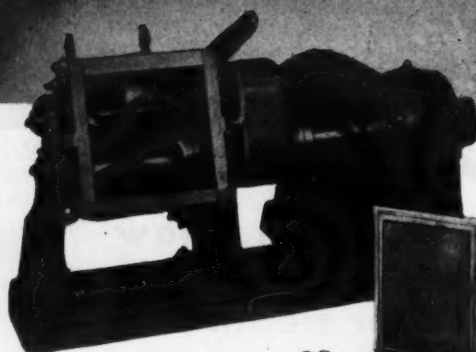
## AIDS TO

### READCO ENGINEERING

1. **LABORATORY FACILITIES** . . . are maintained for the development of new ideas . . . for the improvement of customers' materials and for the continuous improvement of READCO equipment.
2. **SKILLED ENGINEERING STAFFS** . . . with technical knowledge and engineering "know-how" better prepared than ever before to assist in planning and building your process equipment.
3. **MODERN MANUFACTURING FACILITIES** . . . have been expanded to fulfill the exact demands of production for war. These facilities will provide you with better chemical process equipment.
4. **SALES PERSONNEL** . . . although limited, READCO in today's emergency, are anxious to be of service to you far beyond the effort of mere selling equipment.



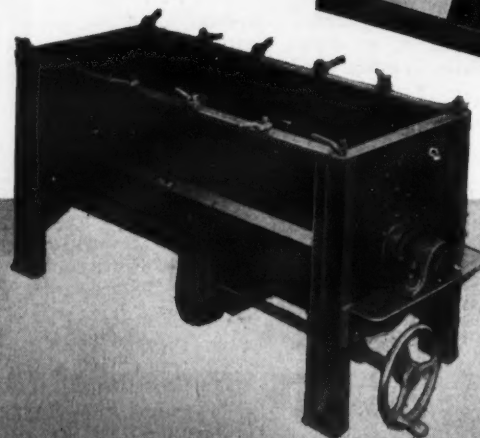
**LABORATORY MIXERS** . . . Easily dismantled for quick cleaning to eliminate contamination. Variety of mixing arms are interchangeable. Built in working capacities of 1, 3 and 6 quarts.



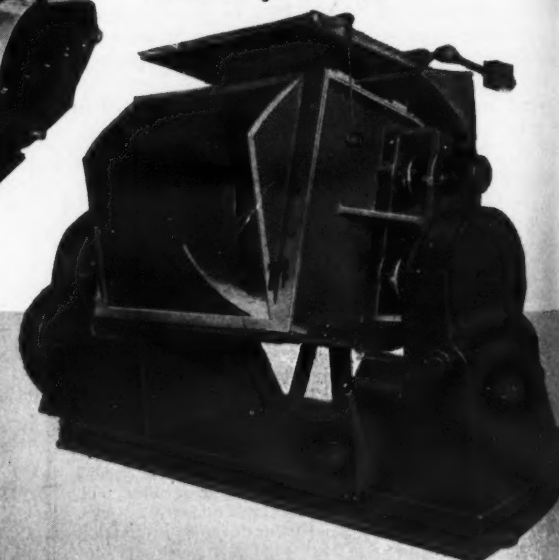
**LABORATORY SHREDDERS** . . . With shredding arms having machine cut serrations. Supplied in either sigma or continuous helix design. Built in working capacities of 1, 3 and 6 quarts.



**PILOT PLANT MIXERS** . . . Built of common metal or stainless steel, with or without vacuum or jacket design. With common base for motor and mixer to assure permanent alignment. Available in standard sizes of 2 1/2, 5, 10 and 15 gallon working capacities with various designs of arms.



**PILOT PLANT BLENDERS** . . . Of the double ribbon type with welded agitator, central discharge through flush plug gate, driven by means of gear-head motor. Built of stainless steel or any commercial alloy in working capacities of 1/8, 1, 2 and 3 cubic feet.



**TILTING BOWL MIXERS** . . . Built of any commercial alloy, with or without jackets, and with either tangential or overlapping arm action. Tilted for discharge by means of torque motors equipped with magnetic brakes. Bowls mounted in large diameter trunnions, concentric with front arms. Built in working capacities of from 25 to 400 gallons.



# Profitable Production

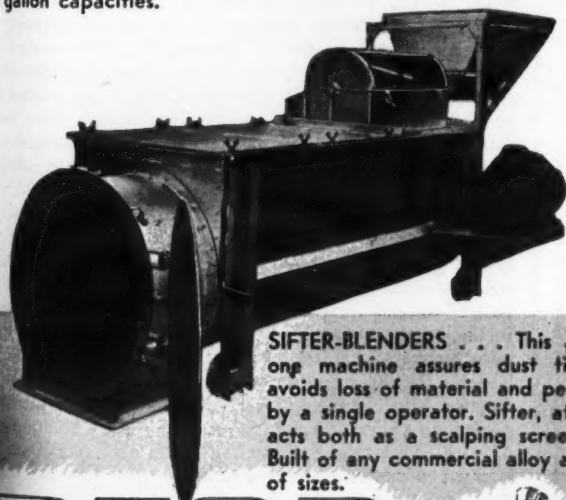
## SERVICE and EQUIPMENT

**PRACTICAL FIELD SERVICE STAFF** . . . also limited in today's production, are factory trained and experienced to supervise erection and service of READCO equipment.

**EFFICIENT MANAGEMENT** . . . stands behind the guarantee of performance on every piece of READCO equipment.

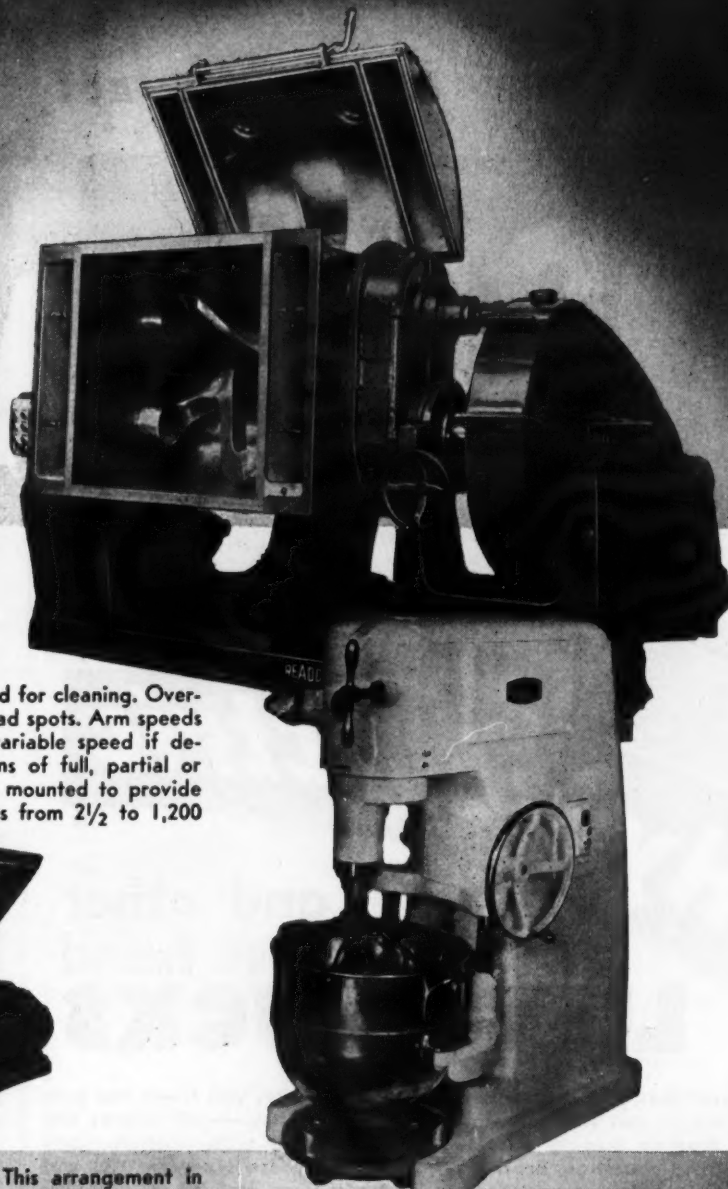
These exceptional facilities, plus the accumulated "know-how" of thirty-seven years including the experience of today's war emergency, enable READCO to offer you many new improvements in chemical process equipment . . . sound reasons why you should plan now to have READCO engineers in consultation. Write READCO today for a complete new chemical and industrial processing equipment catalog.

**SINGLE PACKING GLAND DOUBLE ARM VACUUM MIXERS** . . . Contamination or oxidization is eliminated by single packing gland construction. Split seals, an exclusive READCO feature, mounted on the arm shafts at the bowl ends, are easily removed for cleaning. Overlapping or tangential action mixing arms eliminate dead spots. Arm speeds are provided to suit requirements, multi-speed or variable speed if desired. Temperature control is arranged for by means of full, partial or divided jackets on the bowl. The adjustable cover is mounted to provide perfect sealing at all times. Built in a range of sizes from 2 1/2 to 1,200 gallon capacities.



**SIFTER-BLENTERS** . . . This arrangement in one machine assures dust tight operation, avoids loss of material and permits operation by a single operator. Sifter, at charging end, acts both as a scalping screen and aerator. Built of any commercial alloy and in a variety of sizes.

**VERTICAL MIXERS** . . . With multi-speed planetary mixing action for processing dry materials, cream emulsions, and light plastic masses. Removable bowls. Capacities from 5 to 140 quarts. Various types of agitators are available.



# READ



MATERIAL HANDLING      PILOT PLANT MIXER      LABORATORY MIXER      BLENDING & MIXING      PLANETARY MIXING

## MACHINERY CO., Inc.

YORK, PENNSYLVANIA

## New Solutions

new advantages in construction of towers and galvanized buildings and bring advantages of durable galvanized structure to many products.

GALV-WELD PRODUCTS, Dept. CP, 334 E. 2nd St., Dayton, Ohio.

When inquiring specify CP A1744  
— see information request blank, pgs. 2-3

## Slots Extend Entire Length of Screen

*Wedge-slot design gives great rigidity; for wet, -dry service*


**Problems** — Some screening difficulties are due to inadequate support, rigidity, binding or clogging; moisture following down to the bottom, high breakage with friable materials. Simplified selection of screens to precise requirements is also desired.

**Solution** — Screen design embodying wedge-shaped profile bars held in position by U-shaped holders offers advantages in many processing and classifying operations. These screens provide an uninterrupted slot for the entire screen length. The U-supports are well below the screen surface with rounded tops to shed water and material. The wedge slot U-supports afford a rigid assembly. The screens are made in different bar sizes, bar profiles, and assemblies for both wet and dry operations and to fit various types of equipment both flat and curved, stationary and moving. Any slot opening can be supplied. The same rigid assembly is used for small as well as large openings. The profile is chosen for maximum screen efficiency and life for each specific application. The width at the top of the bar determines the open area, while height of bar is chosen for required carrying strength. Slot opening and feed to screen may determine bar size required. Wet screening and dewatering, — design provides for maximum capillary action, being very pronounced with profile Type B, yet Type C abrasion resisting profile has a taper from head flanges to lower bar sides so that moisture on the bar sides will draw moisture from the surface. U-support sides break flow of moisture. Standard slot openings are from 1/200 to 1 in. Made in various materials. Bulletin on request.

HENDRICK MFG. CO., Dept. CP, Carbondale, Pa.

When inquiring specify CP A1745  
— see information request blank, pgs. 2-3

**You are wasting manpower  
and paying too much for  
moving materials**

**IF**  **your trucks are not**



**HydroElectric**  
**and other  
low-cost hand  
LIFT TRUCKS**



Knowing how since 1910 naturally  
produces lift trucks superior in  
design and construction.

These trucks cost less than 12 cents per day for power, will triple the tonnage your truckers can move. Simply press a button — off moves the load — the trucker merely steers. Precision built with positive gear drive as only the Stuebing Brothers know how, these HydroElectrics out perform — out wear and cost less to operate than any lift truck built. That's why America's greatest industries re-order them again and again.

Get full information today. Stop using three men on jobs  
one man (or woman) can do easier. — Write today.

**LIFT TRUCKS, INCORPORATED**

2425 Spring Grove Avenue . . . . . Cincinnati 14, Ohio

When inquiring specify CP A1746 . . . see information request blank, pgs. 2-3.

## New Solutions

### Electronic Process Speeds Bulk Reduction of Penicillin

*Performs drying 48 times faster than method  
previously used, cuts operating expense and also  
initial cost of equipment*



ELECTRONIC REDUCTION UNIT

**Problem** — Urgent needs for ever greater quantities of penicillin imposed problems of stepping up production. Time required for bulk reduction of purified penicillin — was a principal factor in meeting such requirements.

**Solution** — Electronic system for bulk reduction was developed by RCA laboratories and tested extensively under the auspices

of E. R. Squibb & Sons at the Squibb penicillin production plant. After the penicillin is produced by mold either by surface or submerged fermentation in containers holding up to several thousand gallons, the penicillin containing broth is separated from the mold by filtration and the crude penicillin extracted from the broth with an organic solvent. Chemical treatments then remove most of the impurities and reduce the bulk by about 600 times. This is where the final bulk reduction begins, the objective being to attain potency of about 100,000 units per cc. Since ordinary heat methods of evaporation destroy effectiveness of penicillin, bulk reduction in plants under WPB control has been achieved through freeze-drying. The electronic bulk reducer employs radio-frequency current to concentrate the penicillin solution. The system consists of three large glass bulbs, connected in vertical series, and attached to a pump that maintains a relatively low vacuum, the solution boils at 50° F. To the set-up is connected a 2,000 watt radio-frequency generator. Electrodes carrying the output of the electronic generator are attached to the base of the lowest glass bulb which, when the unit is in operation, holds about 200 cubic centimeters of liquid. From the base of the bulb, a glass tube extends downward for several inches, so that when a beaker of penicillin broth is placed on a platform beneath, it almost reaches the bottom of the beaker. As the vacuum pump starts, the suction draws the solution into the base of the lower bulb. The current is turned on and as current passes through the solution heat up to 50° F. is created and the liquid boils. Evaporation is at the rate of two litres per hour.

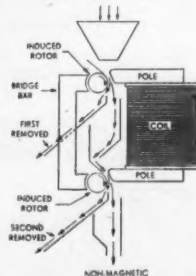
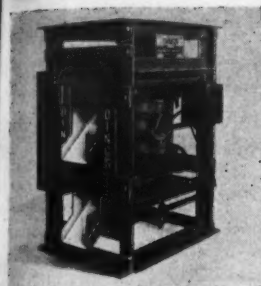
**Results** — Speed of operation is about 48 times as fast as it is in one of the conventional freeze-drying units. The number of units concentrated in 24 hours in an electronic unit corresponds approximately to 20,000 ampoules — each containing 100,000 units. Advantages aside from speeding the process include (1) Reduction in operating costs — about \$65 a day; (2) Reduction in maintenance costs; (3) Smoother production — no refrigeration or mechanical

CHEMICAL PREVIEW



## For Difficult Separations

### THE DINGS INDUCED ROLL MAGNETIC SEPARATOR



### MOST POWERFUL TYPE SEPARATOR IN EXISTENCE!

Designed for removing feebly magnetic particles from non-magnetic substances or concentrating slightly magnetic minerals. Widely used to treat barytes, borax, nephelene syenite, salt, tungsten, feldspar, abrasives and other granular materials. Capable of performing separations not possible on other types of machines. ASK FOR CATALOG 770.

Dings Magnetic Separator Co.

310 E. Smith St., Milwaukee 7, Wis.

World's Largest Exclusive Builders of Magnetic Equipment. Established 1899.



When inquiring specify CP A1747 — see information request blank, pgs. 2-3

## Free — Send for it Today!

**ALLIS-CHALMERS MEN  
Build Fine Motors...**

**Meet Mr. Quality**  
This motor is built to last and to give you the best performance in any application.

**See it off gas trouble**  
This motor is built to give you the best performance in any application.

**"O.K. Hope - G.E. G.E."**  
This motor is built to give you the best performance in any application.

**What do you say, Doc?**  
This motor is built to give you the best performance in any application.

**Yes, Men Make Motors!**  
This motor is built to give you the best performance in any application.

**THEY DEPEND ON ALLIS-CHALMERS MOTORS**

Engineering, construction and application information of Allis-Chalmers' wide line of motors is given in this amply-illustrated bulletin just released. You can get complete information about A-C motors — motors you can depend on, by writing for B6052. ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN

A 1842

When inquiring specify CP A1748 — see information request blank, pgs. 2-3

## New Solutions

ical difficulties; (4) Less floor space required. (5) Smaller initial investment in equipment. Further information on this and other electronic units for plastic, and other applications on request.

RCA (Victor Div.), Dept. CP, Camden, N. J.

When inquiring specify CP A1749 — see information request blank, pgs. 2-3

### Tips on Handling Sanitation, Odor Problems, Cleaning Transformers, Paper Mill Maintenance

Recent issue (Vol. XXIX-Nos. 3-4) of publication of manufacturer of industrial cleaners features a number of articles dealing with solutions of such plant problems as dealing with industrial sanitation and odors, cleaning oil cooled transformers, paper mill maintenance, milkstone removal, cleaning blanchers, cleaning slashers in rayon mills, porous chromium plating and the use of platers' cleaner in preparing such work. The article on cleaning transformers gives complete details on simple, rapid, economical methods. The desirable features of water solutions in cleaning are emphasized and removal of moisture by means of hot water rinse and hot air blowers is discussed. Figures are cited for actual cleaning time by this procedure: 4000 KVA model transformer (234 2in. tubes) 60 hours; 75 KVA model, 3 hours.

OAKITE PRODUCTS INC., Dept. CP, 27 A Thames St., New York 6, N. Y.

When inquiring specify CP A1750 — see information request blank, pgs. 2-3

**ALSOP  
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### FOR Almost every type of Filtration work

#### For Instance Oils

Turbine, Hydraulic, Transformer, Lubricating, and Cutting Oils and coolants can all be maintained in perfect condition, thus ensuring perfect protection to bearings etc., or many oils can be recovered after use and that's IMPORTANT TODAY.

#### Then Again

All plating processes can be speeded up, rejections eliminated, and superior, finished work guaranteed by ALSOP filtration.

#### AND

It's just as good for practically any industrial or chemical filtration work.

### ALSOP ENGINEERING CORP.

19 ALSOP SQ.

MILDALE, CONN.

When inquiring specify CP A1751 — see information request blank, pgs. 2-3

## Now 2 TYPES

### To Meet Most Process Pulverizing Jobs

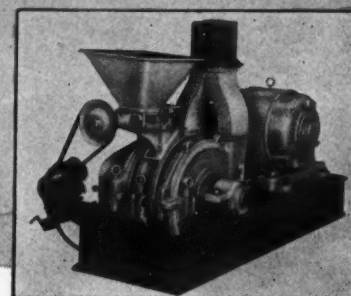
### For FINE pulverizing THE MIKRO-PULVERIZER

For over 20 years the recognized leader in the field, MIKRO-PULVERIZERS have been successfully producing fine grinds of a large variety of materials. With dependable mechanical control of particle size, these machines operate without fan or auxiliary devices...cut cleaning time, power, labor costs and conserve floor space. Sizes range from 1/4 HP to 75 HP.



### For ULTRA-FINE pulverizing The New MIKRO-ATOMIZER

This new mechanical, screenless unit of revolutionary design, features self-contained fans and separators. Capable of producing powders of 1 to 25 micron particle size it grinds to a range of fineness beyond the ability of the MIKRO-PULVERIZER.



#### Sold only with this Pre-Test Guarantee

The data recorded in a special grinding laboratory test which is made on a sample of your material guides our engineers in recommending the correct type of pulverizing equipment to best meet your requirements. A definite Performance Guarantee accompanies every machine sold.

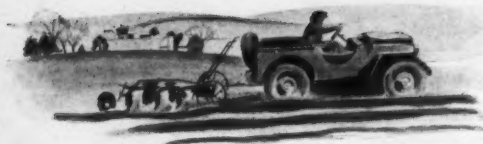
Write for MIKRO-PULVERIZER Catalog  
and MIKRO-ATOMIZER Bulletin

### PULVERIZING MACHINERY COMPANY

60 CHATHAM ROAD, SUMMIT, N. J.

## MIKRO-PULVERIZER ULTRA-FINE MIKRO-ATOMIZER

When inquiring specify CP A1752 — see information request blank, pgs. 2-3



## A job for a Jeep, not a Truck



**WHEN** your equipment calls for small horsepower, you're saving money when a Coppus "Blue Ribbon" Steam Turbine is on the job.

Coppus makes turbines in six frame sizes from 150 HP down to fractional — so you can "fit" the power more closely to the need. No reason to pay extra for ordinary "elephant power" turbines, when you have a small horsepower requirement.

Many well-known manufacturers of original equipment have selected Coppus turbines. And they are to be found on U. S. destroyer escorts, driving vertical lubricating oil pumps... on U. S. Casablanca class aircraft carriers, driving main and auxiliary circulating pumps and fire pumps... on more than 90% of all Landing Ship Docks, driving condensate and clean ballast pumps.

You, too, can rely on their dependable performance to meet your requirements for "jeep" power. Like all Coppus "Blue Ribbon" products (blowers, ventilators, gas burners, etc.), the Coppus turbine is a precision-made product — its accuracy controlled by Johansson size blocks — and every turbine is dynamometer-tested before shipment. Since 1937, more than 85% of orders have been repeat orders. Write for Bulletin 135-10. **COPPUS ENGINEERING CORPORATION, 245 Park Avenue, Worcester, Mass.** Sales Offices in **THOMAS' REGISTER**. Other products in **SWEET'S, CHEMICAL ENGINEERING CATALOG, REFINERY CATALOG**.

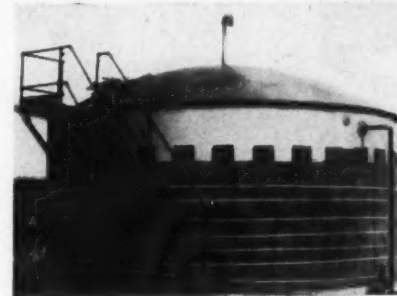
ANOTHER  
**COPPUS**  
"BLUE RIBBON" PRODUCT

When inquiring specify CP A1753 . . . see information request blank, pgs. 2-3

## New Solutions

### Cellular Glass Insulation For Tanks, Vats, Towers, and Walls

*Impervious to water, acids; great rigidity; used in furnaces, flues, ducts, kilns*



SLABS OF GLASS INSULATION applied with steel bands

**Problem** — Large oil company wishes to obtain an insulation which would accomplish a positive contraction job and not be subject to deterioration often affecting exterior installation applications. Mechanical conditions in insulating such tanks are also a factor. Slipping, warping some times result with materials that are non-rigid, non-absorptive and non-impervious.

**Solution** — This problem was solved satisfactorily by application of slabs of "cellulated" glass insulation. The insulation when used on hot oil storage tanks as in this instance is applied with steel bands (see accompanying illustration). The mechanical difficulties of handling this job were greatly reduced as the insulation is lightweight, easily handled and can be cut and shaped without any special tools.

**Results** — Positive temperature control provided with impervious nature of the insulation eliminating deterioration of acid, water, vapor and fumes having no effect.

**Problem** — In plants manufacturing petroleum by-product temperature control, humidity control and condensation present difficulties. In one case condensation was bothersome, not only in emulsifying the product but in maintenance of the buildings. Humidity factor was dominant and insulation was not withstanding water absorption. This absorption rotted the insulation and raised the heat conductivity of the material as a direct result of the increased water content.

**Solution** — Glass insulation applied in core wall construction on both outer wall and interior partitions.

**Other applications** — Used as a means of temperature control in large towers (see cover picture) where chemical reactions take place under a wide temperature range. The insulation — "Foamglass" — was used on tower of equipment for extracting various oils for paint and by-product by molecular selection process. Exact temperature in the tower 70 feet high and 17.2 feet in circumference had to be maintained constantly. Rigidity and compressive strength contribute to its ability to serve in installations where permanency is a prime factor as in insulating roof areas and tops of tanks and equipment.

**Description** — So far, "Foamglass" has been produced in rigid slabs 12" x 18" in various thicknesses. It is "cellulated" so that its volume is about 15 times that of ordinary glass, weighing 10 lbs. per cu. ft.

It is produced through a reaction of ordinary glass and carbon. One cubic foot contains more than five million cells. It has a crushing strength of 150 lbs. per cu. ft.

**PITTSBURGH CORNING CORP., Dept. CP, 632 Duquesne Way, Pittsburgh, Pa.**

When inquiring specify CP A1754 — see information request blank, pgs. 2-4

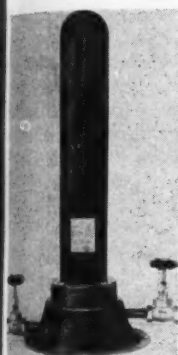
CHEMICAL PREVIEW



## New Solutions

### Gas Purifier Utilizes Palladium Catalyst

Unit requires no external heating; palladium catalyst effective at room temperature



Gas Purifier

**Problem**—Increased efficiency in removing oxygen from gases such as hydrogen, nitrogen, argon and neon saving time, reducing costs for plants requiring pure gases. Application in radio and radar tube manufacture, in heat treatment of alloys, powder metallurgy and research laboratories using pure gases are examples of operations where such improved purifying is desired.

**Solution**—Recently developed method utilizes the precious but not restricted metal palladium as a catalyst that operates at room temperature together with a portable analyzer provides economical means of removal. The unit known as the "Deoxo Gas Purifier," has shown under laboratory tests and under practical working conditions its efficiency in removing hydrogen from gases. Two models are offered, both are compact containing the catalyst encased in metal cylinders provided with intake and outlet valves through which the gas is passed. The first stands 20 in. high and is for laboratory and limited production use. It has a capacity of 200 cubic feet of gas per hour. The other is for general plant operation and constructed for wall mounting. Capacity is 10,000 cubic feet per hour.

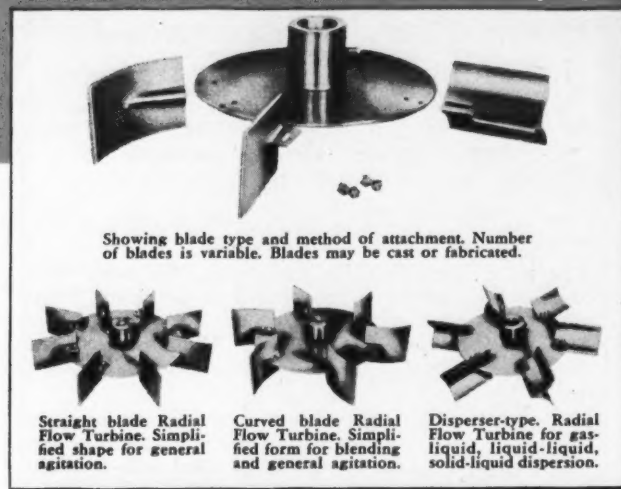
**Results**—In removing oxygen by the usual method of passing the gas over copper filings or a platinum asbestos catalyst at temperatures as high as 600 degrees C., the most careful control is required and long periods are required for heating up and cooling down processes. Flow resistance is almost negligible. Tests conducted at a leading university on commercial hydrogen containing 0.1 per cent of oxygen before treatment resulted in removal to a content of 0.00001 per cent upon passage of the hydrogen over catalyst at maximum flow rate. A portable analyzer, being perfected, will indicate continuously hydrogen or oxygen impurity.

BAKER & CO., INC., Dept. CP, 113 Astor St., Newark, N. J.

When inquiring specify CP A1755  
—see information request blank, pgs. 2-3

For more information on product at right, specify CP A1756  
... use information request blank between pages 2-3.

## EVERY JOB SPECIFICALLY ENGINEERED WHEN YOU USE *Process Adapted Agitation*



Showing blade type and method of attachment. Number of blades is variable. Blades may be cast or fabricated.

Straight blade Radial Flow Turbine. Simplified shape for general agitation.

Curved blade Radial Flow Turbine. Simplified form for blending and general agitation.

Disperser-type Radial Flow Turbine for gas-liquid, liquid-liquid, solid-liquid dispersion.

• There is one best way to handle every fluid agitation problem and from the complete line of **LIGHTNIN** and **MIXCO** mixers there is one model that can best answer that problem.

### LIGHTNIN AND MIXCO

Top-Entering Mixers are designed specifically for mixing under pressure, vacuum, air-tight, vapor proof, and other similar conditions. They are applicable to all tanks and materials and are integral units, completely assembled at the factory ready to bolt to your head nozzle.

### Why these Mixers can be adapted to your Particular Job

1. They are available in 1/4 to 25 H.P. 2. They can be adapted to tanks already in use, either using existing openings or new openings, dimensional drawings for which are furnished by Mixing Equipment engineers. 3. Can be furnished in direct or gear-drive and motor speeds to perform most efficiently on your particular job.

### TYPES OF AGITATION

**LIGHTNIN** Propeller Type Agitators provide double motion, off-center agitation with top-to-bottom turnover—the simplest and most reliable type of agitation in liquids up to

4,000 centipoises. **MIXCO** Agitators, radial type, for larger tanks and heavy duty applications. They require baffles as part of the installation.

### OTHER MIXERS

**Portable Mixers:** 1/4 to 10 H.P. for rim attachment to open tanks. Gear and direct drives. Offset positioning gives double mixing action. Extended bearing is sealed against oil and grease leaks.

**Side-Entering Mixers:** 1 to 25 H.P. for horizontal installation. Propeller-type only. For any size tank. Many models and drives. Multiple installations are now in use on tanks of up to 5,000,000 gals. capacity.

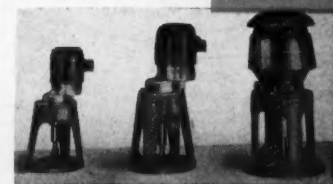
### WHAT SIZE AND TYPE DO YOU NEED?

There is a Process Adapted Agitator for every size and shape of tank and every operation; for batch or continuous operation. Your savings will quickly repay the necessary modest investment. Because Mixing Equipment Co. products include all types of fluid agitators, you can obtain from them an impartial recommendation for the most economical solution of any problem involving fluid agitation. Mixing Equipment Co. engineers will gladly assist in solving your particular agitation problem.

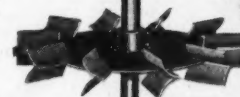
Blending Miscible Liquids	Mixing Immiscible Liquids	Crystal Size Control	Gas Absorption & Dispersion	Suspension of Solids	Heat Transfer
Simple Mixing of soluble liquids as in reducing concentration.	Washing of Liquids Extraction Contacting Caustic Treatment Emulsions	Precipitation Evaporation Systems	Hydrogenation Aeration Gas Scrubbing Chlorination Gas Washing	Slurries Slaking Lime Suspension of: filter aid, activated carbon, Fullers Earth, Crystals while dissolving.	Still Evaporators Reactor Vessels Heating Cooling



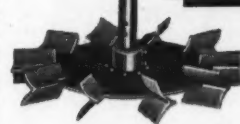
Turbine-type top-entering mixer.



Propeller-type gear and direct drive.



Alternate drives available.



### THE BASIS OF OUR RECOMMENDATIONS

Twenty-three years of experience has resulted in an organization, research facilities and skill which qualify Mixing Equipment Company as an authority in the field of agitation. Mixing Equipment Company offers its services in the solution of any problem involving controlled recirculation of liquids to produce physical and chemical changes, as indicated in the above table.

### MIXING EQUIPMENT COMPANY, INC.

1085 GARSON AVENUE

ROCHESTER 9, N. Y.

### MIXING EQUIPMENT CO., Inc.

1085 Garson Avenue, Rochester 9, N. Y.

Please send me the literature checked:

- ☐ B-66 and B-76—Side Entering Mixers
- ☐ B-78—Top Entering Mixers
- ☐ B-75—Portable Mixers (Electric and Air Driven)
- ☐ B-77—Laboratory Mixers
- ☐ Mi-11—Operating Data Sheet

Name.....

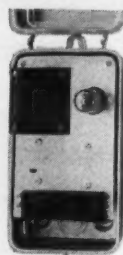
Address.....

## Automatic Controls That Save Material and Labor

### FARATRON Electronic LIQUID LEVEL CONTROL

prevents overflow waste and emptiness damage. Operated by electronic action, the FARATRON signals or controls the level — high or low — of any kind of liquid at any temperature, in any type of container or processing machine, either open or closed, free or under pressure.

Absolutely safe, absolutely sure, accurate to 1/16th inch. Needs no attention. Write for descriptive Bulletin 1447.



### LUMENITE INTERVAL TIMER



signals or controls the timing of any program or operation in split seconds to hours. Automatic reset and repeat or manual reset. Dependable, accurate, long-life, heavy duty construction.

Write us your requirements or ask for Bulletin 1447T.

**Lumenite Electronic Company**  
407 S. Dearborn St. Chicago 5, Ill.

When inquiring specify CP A1757 — see information request blank, pgs. 2-3

## ★ INSTRUMENTS of CONTROL

### Process Plant Thermometers, Both Indicating and Recording Models

*Utilize special star shaped tubing for greater strength; pointer directly connected to Bourdon spring*

**Uses** — Applications in process plants, in power plants, machine regulation and production control.

**Features** — Long lived Bourdon spring cold drawn from sheet bronze, inside or pointer end of the spring being carefully welded without annealing. Easily accessible screw permits quick recalibration. The small sensitive bulb in certain ranges can be screwed into a 1 in. standard pipe "T".

**Description** — Essentially these industrial thermometers consist of a bulb or sensitive element, capillary tube and compensated Bourdon spring solidly filled with a special heat-responsive liquid under pressure. The pointer is connected directly to the Bourdon spring making a one to one ratio movement. This construction eliminates all screws, levers, hairsprings, gears and other delicate parts. The star shaped tubing is formed by passing round section tubing through v-shaped rollers. The walls are pushed inwardly, forming a tubing of star shaped section an internal diameter of .006 and .007 of an inch — less than one-third the size of ordinary capillary tubing. The maker uses this method of forming tubing walls into arch formation

for greater strength. Indicating thermometers available in two standard models, with capillary tubing or rigid stems. Difference in models is primarily in face and mounting bracket dimensions. Standard graduations for both above and below and including plus 350° F. Higher ranges are available. The recording thermometer has a 6 inch chart with rather large range coverage. It is enclosed in a dust and moisture proof aluminum case. Available in portable (with strap handle) and wall mounting types. Equipped with 24 hr. mechanical clock movement, 7 day mechanical clock movement at extra cost. Catalog illustrates various types and lists and illustrates charts.

THE ELECTRIC AUTOLITE CO., Dept. CP, Lacrosse, Wis.

When inquiring specify CP A1750 — see information request blank, pgs. 2-3

### High Lift Pop Relief Valve

*Velocity of Fluid is entrapped; kinetic force converted into additional lift for higher relief discharge*

**Uses** — For use on steam, air, gas, water and other process lines.

**Features** — Exceptionally high coefficient of lift for the disc, secured through unique design by which velocity of the fluid is entrapped and its kinetic force is converted into additional lift for higher discharge. Built with an adjustable single blow down ring permitting regulation of the amount of pressure to be relieved on individual operations. Economical, minimum blow-down results without interruption to plant operations due to unnecessary loss of pressure from relief action.



**Description** — Designed for pressures up to 300 lbs. Calibrated Valve adjusts to needs of carbon steel springs used in this individual requirements valve; also available with hand wheel for adjustments or with packed adjusting bolt under a protecting cap for gas service. Sizes 1/2 - 2 1/2 ins., full ASME specifications (No. 1800). Smaller utility type (No. 1840), no adjustable blow ring but with predetermined orifice made in sizes 3/8 - 1 in.

FARRIS ENG'G CO., Dept. CP, 345 Commercial Ave., Palisades Park, N. J.

When inquiring specify CP A1760 — see information request blank, pgs. 2-3

### Abraser Set for Testing Wear Resistance of Surfaces

*Tests all types of surface finishes: paint, plastics, rubber, paper, metal*

**Uses** — This testing set includes abramer, with all accessories, together with a specimen table for running tests under wet or moist conditions. The abramer is used for determining the wear or abrasion resistance of all kinds of



Write for this  
Descriptive Folder  
Today



Only **2** Minutes...  
To Make Accurate Carbon or Sulfur Determinations



### JUST LOOK AT THESE FEATURES

#### Carbon Determinator

1. Price.....\$164.00
2. Accuracy, carbon range.....1.25 to 5.00%, within .020%  
Carbon range.....0 to 1.25%, within .005%
3. Speed.....2 minutes for complete determination, plus sample weighing time.
4. Cost of operation, material.....less than 2c per determination
5. Test procedure.....simple, automatic leveling
6. Versatility.....for ferrous and non-ferrous metals
7. Range.....0 to 5.00% carbon

#### Sulfur Determinator

1. Price.....\$146.00
2. Accuracy.....0 to 0.39%, within .002%
3. Speed.....2 minutes for complete determination, plus sample weighing time
4. Cost of operation, material.....approximately 2c per determination
5. Test procedure.....simple, only one solution need be prepared accurately
6. Versatility.....for ferrous and non-ferrous metals
7. Range.....0 to 0.39 sulfur

**ARL • DIETERT**

Applied Research Laboratories  
4336 San Fernando Rd., Glendale 4, Calif.

Harry W. Dietert Co.  
9330 Roselawn Ave., Detroit 4, Mich.

When inquiring specify CP A1758 . . . see information request blank, pgs. 2-3



## INSTRUMENTS

materials subject to surface abrasions such as metal furniture finishes, rubber samples, aluminum, linoleum, leather, upholstery.

**Features** — The abraser is self-contained and ready to operate. Durable construction and is safe in the hands of the average person. All parts are precision machined. Tests delicate and tough materials with equal precision.

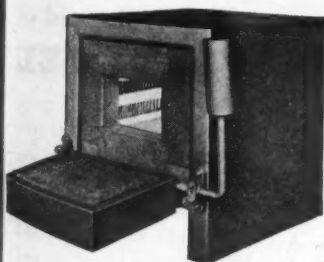
**Description** — The wearing action of the abraser is performed by dual Calibrase wheels bearing against the specimen under constant pressure, revolving in opposite directions, one sliding radially toward the outside and the other sliding toward the inside of the wear path. Each wheel revolving at a steady constant speed through contact with the specimen exerts a combined abrasive, compressive and twisting action twice in each revolution of the specimen holder. Because the specimen holder travels a complete circle, the wear due to difference of grain or weave is fully revealed. A standardized load adjustment is provided by varying the pressure of the Calibrase wheels against the specimen so that the abraser will test both delicate and tough materials with equal precision. The results of tests are reported either as the number of "wear cycles" or as "loss in weight" when weighed on a precision laboratory balance. The complete set includes: Specimen holder with A & B Ring and Clamping Plate, specimen punch, specimen plates, 5 sets Calibrase wheel, manual, wood case, shear hardness attachments, specimen holders, illuminated magnifier, etc. Accessories include a vacuum pick-up recommended when running tests on open weave fabric for removing abrasions imbedded in the weave. Its suction action effectively disposes of such material, confining the test to the fabric only. Also a multiple specimen holder which consists of an eight section table, permitting eight test runs on thin flexible materials or fabrics to run simultaneously for quick comparison. Illustrated bulletin sent on request.

TABER INSTRUMENT CO., No. Tonawanda, N. Y.

When inquiring specify CP A1761 — see information request blank, pgs. 2-3

## Lab Furnace — Range Up to 2000° F.

*Streamlined design; full metal outer casing of re-inforced steel and layered insulation*



ELECTRIC FURNACE

**Uses** — This electrically heated furnace has been designed for laboratory and tool room use.

**Features** — This furnace has recently been redesigned. It is now supplied with a full metal outer casing, made of re-inforced steel and layered insulation.

**Description** —

These furnaces are available in standard sizes for operation up to 2000 degrees F. They are equipped with the maker's special folded and formed production furnace type heating elements. This furnace is one number of a complete line of ovens, kettles, furnaces, lead baths, air heaters, strip heaters. Detailed information on the MLR tool room furnace and other equipment on request.

HAROLD E. TRENT CO., Dept. CP, 235 Leverington Ave., Philadelphia 27, Pa.

When inquiring specify CP A1762 — see information request blank, pgs. 2-3

*Photoswitch Electronic Controls at work for a large yeast manufacturer.*



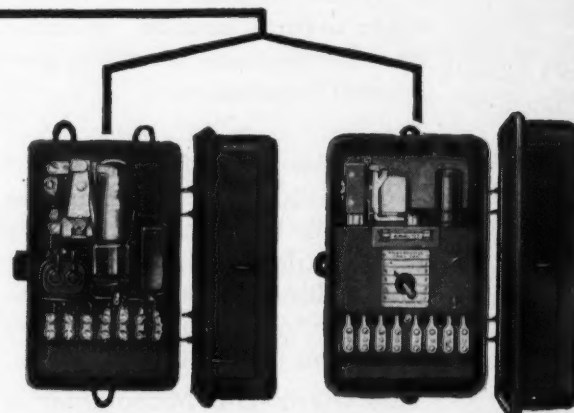
## Save Manpower — put electronics to work

As did the yeast manufacturer whose installation is pictured here. Before Photoswitch went on the job, a full-time operator was needed to guard this tank against excessive foaming. Now it's done automatically — with a standard Photoswitch Electronic Level Control.

As the photograph illustrates, a probe or electronic "finger" extends into the tank. When rising foam reaches this finger, a signal is relayed to the level control which opens a solenoid valve permitting an anti-foaming agent to flow into the tank. A Photoswitch Electronic Timer used in addition controls the interval during which the valve is held open and regulates the amount of anti-foaming agent added. Operation is precise — no chemicals are wasted — and a cleaner product results.

★ ★ ★

If there's a spot in your plant where automatic control can replace much-needed manpower, why not investigate Photoswitch electronic methods? With Photoswitch at work, there's no problem of labor turnover or absenteeism. Nor is there even the question of upkeep common to other automatic control systems. Electronic controls contain no moving parts to wear or fail in operation — give dependable day-in day-out service, with negligible maintenance, over an unusually long life.



Signal from electronic "finger" at tank actuates Photoswitch Level Control (left) and Timer (right) mounted on control panel.

Photoswitch Electronic Controls are at work today throughout industry controlling levels automatically, timing, counting, inspecting, safeguarding — performing hundreds of specialized operations. Whatever your control problem, let us have the details, and we may have the answer — pre-engineered and packaged, ready for quick and easy installation.

*Electronic Controls by*  
**PHOTOSWITCH** INCORPORATED  
CAMBRIDGE 42, MASSACHUSETTS • District Offices in All Principal Cities

When inquiring specify CP A1763 . . . see information request blank, pgs. 2-3



# MERIAM

## Clean-Out

### MANOMETER

**Quickly and Easily Cleaned  
Without Disconnecting**

**T**HIS U-Type Clean-Out Manometer is for checking gas and air pressures from a few ounces up to several pounds. Suitable for either portable service or permanent installation.

The head is quickly removed — with a few turns of the wing nut — permitting quick cleaning of tube, with brush furnished. This feature also adds to its portability. It also allows convenient changing of the indicating fluid (oil, water or mercury).

This Clean-Out Manometer is available in standard ranges from 6" to 50". One of many instruments made by us throughout the past 34 years. Ask for Bulletin 1.

**THE MERIAM INSTRUMENT CO.**  
10940 Madison Avenue • Cleveland 2, Ohio  
In Canada: Peacock Bros., Ltd., Montreal

**MERIAM** ★  
*Instruments*  
ESTABLISHED 1911

MANOMETERS, METERS AND GAUGES FOR THE ACCURATE MEASUREMENT  
OF PRESSURES, VACUUMS AND FLOWS OF LIQUIDS AND GASES

When inquiring specify CP A1764 — see information request blank, pgs. 2-3

## INSTRUMENTS

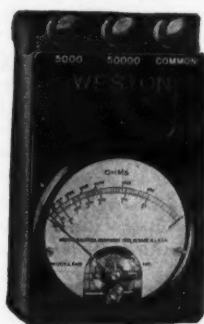
### Electronic Controllers For Circular Chart Potentiometers

*Continuous balance principle provides continuous control; actuation of control switch is almost simultaneous with change in temperature*

**Uses** — These electronic contact controllers are for circular chart electronic potentiometers. They are available in two forms. The first contains a locking-in type relay and is designed primarily for electric furnace control. It can also be used for similar applications involving the use of contactors and for processes requiring a differential gap. The second form does not contain the relay and is designed for direct control of motorized valves, operation of signaling devices and for applications requiring a dead (open) neutral but only to operate motorize valves of signals.

**Features** — In the locking-in type the control switch is cam operated. The cam is securely locked to the main operating shaft, assuring no lost motion between slidewire contact, pen and pointer, and control cam. In models without relay the open contact control switch mounted on rear of the instrument provides direct operation of external control equipment. External connections are made to terminal block in the rear of the case. Control is continuous and switch is factory adjusted for low-high control action.

**Description** — The maker's electronic potentiometer recorders utilized the now familiar continuous balance principle whereby an unbalance in the measuring circuit is detected and corrected as soon as it occurs. By utilizing the same motion which re-balances the measuring circuit to actuate a control switch, a continuous control instrument



**CONVENIENT**  
*Pocket-Size for*  
**CONTINUITY TESTING**

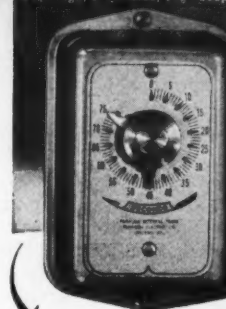
### WESTON MODEL 689 OHMMETER

Pocket-size but with typical WESTON dependability and ruggedness, Model 689 Ohmmeters are unequalled for checking circuits by resistance and continuity method. Available in two types . . . type 1E with double range of 0-5,000 ohms and 0-50,000 ohms, and type 1F with double range of 0-10 and 0-1000 ohms . . . ideal for motor maintenance. Entirely self-contained. Order through your local Weston representative, or direct from . . . Weston Electrical Instrument Corporation, 618 Frelinghuysen Avenue, Newark 5, New Jersey.

**WESTON Instruments**

When inquiring specify CP A1765 — see information request blank, pgs. 2-3

4 1/2" high, 2 1/2" wide, 1 3/4" deep.



**DON'T  
ABUSE!**  
YOUR  
ELECTRICAL  
EQUIPMENT

**PROTECT IT WITH Paragon**

**TIME  
DELAY  
RELAYS**

**NOTHING** is more vital to the war production program than electrical equipment. Guard it with Paragon automatically reset, synchronous motor operated 800 series time delay relays, which:

1. Protect rectifiers and tube filaments from application of plate current before filaments are preheated.
2. Accurately control the various steps of motor acceleration.
3. Dependably delay the closure of elevator control circuits.
4. Stagger the closure of multiple circuit systems so that full load will not be applied at start.

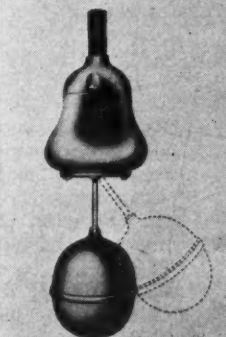
Accuracy of the time cycle and operation of the timer not affected by changes in ambient temperature or vibration. Designed for panelboard mounting or may be mounted to standard handy box or single gang switch box.

**PARAGON  
ELECTRIC CO.**  
720 Old Colony Bldg.  
CHICAGO 5, ILLINOIS

**Paragon** *Chicago*

When inquiring specify CP A1766 — see information request blank, pgs. 2-3

### "Stop-Go" FLOW CONTROL FOR BINS, HOPPERS, TANKS, ETC.



**... with the aid of  
TELLEVEL**

Like an automatic traffic signal, the inexpensive TELLEVEL regulates the flow of liquids or bulk materials into bins or tanks. The movement of the arm and ball, induced by rising and falling levels of material, operates gates, valves, conveyors, feeders, etc., automatically.

Why not investigate TELLEVEL'S possibilities in your plant? Ask for descriptive bulletin No. 440.

**STEPHENS-ADAMSON**  
MFG. CO.

Tellevel-Bin Level Controls Car Loaders Car Pullers Winches  
SealMaster Ball Bearings

**11 RIDGEWAY AVE., AURORA, ILLINOIS**

When inquiring specify CP A1767 — see information request blank, pgs. 2-3



## INSTRUMENTS

been provided. There is no delay between re-balancing of the measuring circuit and actuation of the control switch. Consequently, actuation of the control switch is practically simultaneous with change in temperature. The locking-in type relay model has an open contact control switch, mounted on the rear of the chassis, which operates the locking-in type relay mounted in the instrument case. Power contacts of relay govern external control equipment. Low-voltage, locking-in type relay is mounted in the rear of the case. The relay coil and control switch circuit operate on 20 volts, AC. The relay contains a built-in transformer to reduce the line voltage to 20 volts. Relay power contacts are SP DT for on-off or two-contact control action. The relay contact rating (non-inductive loading) is as follows: 10 amps at 115 volts AC; 5 amps at 230 volts AC,  $\frac{1}{2}$  amp at 115 volts DC,  $\frac{1}{4}$  amp at 230 volts DC. Power to relay transformer is supplied through the main instrument power switch. When the instrument power is shut off, the relay will drop out, simulating high temperature, and shut-down the control equipment.

The recording controller is available in the same frequency voltage combination as the circular chart recorder — 110 to 125 volts, 60, 50 or 25 cycle for standard speed; 60 or 50 cycle for fast speed. The controller may be used to control any 115 volt or 230 volt AC or DC circuit within the ratings specified under "contact capacity."

In the model without relay the contact capacity of the control switch is 1 ampere at 115 volts AC — (non-inductive load). The instrument power circuit and control circuit are interconnected internally. Turning off the instrument power switch de-energizes the control circuit. Controlled equipment must have the same voltage and frequency rating as the potentiometer controller. Both sides of the line are accessible in the rear of the case for making external control connections. This controller, too, is available in the same voltage and frequency combinations as the circular chart recorder. The electric contact control mechanism is available for circular chart pneumatic controllers in same voltage and frequency.

THE BROWN INSTRUMENT CO., Dept. CP, Philadelphia, Pa.

When inquiring specify CP A1768 — see information request blank, pgs. 2-3

### Metal Detector Operates as Stationary Unit or in Connection with Conveyor

Bulletin describes metal detector for use in connection with handling wide range of materials in bulk, and in containers. These applications may be arranged for continuous flow through detector or a periodic flow manually controlled. A micro-control permits adjustment for sensitivity. Practically any size opening in the unit can be provided for conveyor belt or product itself. Bulletin 3306.

ILLINOIS TESTING LABORATORIES, Dept. CP, 420 N. La Sale St., Chicago, Ill.

When inquiring specify CP A1769 — see information request blank, pgs. 2-3

### Mercurial Industrial Thermometers

64-pages comprehensive reference data on high-accuracy mercurial industrial thermometers and related instruments are offered in handy form. The instruments illustrated and described cover a wide range of industrial uses, including power plants, chemical and process industries, refrigeration, air conditioning, food processing, warehouses, paint and varnish manufacture, pipe lines, pump stills and boilers and similar applications. Data is complete and factual for use, specification and installation. Copies of Bulletin E are sent on request.

PRECISION THERMOMETER & INST. CO., Dept. CP, 1434 Bradywine St., Philadelphia 30, Pa.

When inquiring specify CP A1770 — see information request blank, pgs. 2-3

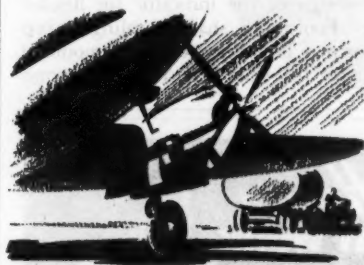
For far reaching advancements  
in instrumentation...  
consult **BECKMAN!**



A better method of controlling electronic circuits. When Radar and other directional and depth-finding devices became of critical importance, there was a problem of accurately controlling the complex electronic circuits used. Another Beckman development—the Beckman Helipot, a new type potentiometer that combines both wide range and high sensitivity in one extremely compact unit—proved to be the solution and is now being supplied in large quantities to fill top-priority military needs.

THE BECKMAN research staff has had years of experience in developing new, better, more accurate methods of controlling modern production processes through advanced instrumentation. Perhaps this widespread experience in solving instrumentation and control problems in many types of industry can be of help on *your* problem. Why not contact us? No obligation, of course.

### SOME OF THE BECKMAN DEVELOPMENTS INCLUDE...



A better method of controlling aviation gasoline refining. When aviation gasoline became number one on the war production "musts", ways had to be devised to speed up and simplify control of processes in the giant new 100 octane refineries. Working in cooperation with leading petroleum scientists, Beckman engineers produced in quantity a new routine Infrared Spectrophotometer which today is the key control instrument in virtually every one of the modern high octane refineries. This instrument has cut the time required for the analysis of complex hydrocarbon mixtures from many hours to only a few minutes, greatly stepping up the efficiency and economy of war-paced refinery processes.



A better method of controlling Toluene production processes. When Toluene (basic for TNT) became another war essential, new processes were developed to produce this product on a large scale from petroleum. Again there was a critical control problem, and again the Beckman organization provided the answer—this time with the Beckman Quartz Spectrophotometer.



A better method of controlling Penicillin production. In developing a new secret process for the large-scale production of Penicillin, chemical engineers found that accurate pH control was essential for optimum yield. Knowing the pioneering accomplishments of the Beckman staff in advanced instrumentation, they brought their problem to the Beckman organization. Result—Beckman engineers, from their extensive background in pH, developed a special type of flow chamber that is now playing a major role in today's stepped-up Penicillin production.

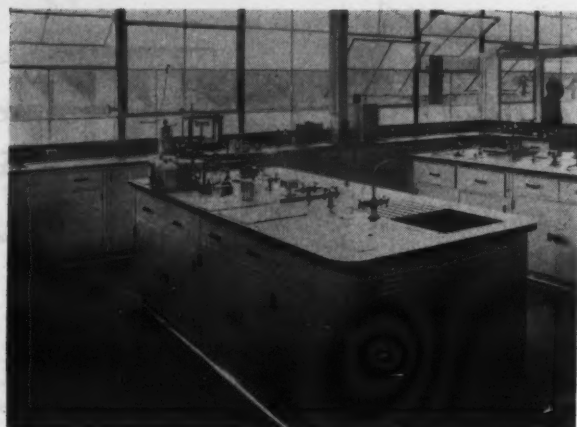
THESE ARE ONLY TYPICAL OF MANY BECKMAN DEVELOPMENTS in instrumentation and control methods for chemical... mining... food... petroleum... vitamin... paper and other production processes. This vast fund of "know-how" for applying science to the control of production processes is at your service. Write, outlining your problem.



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**INSTRUMENTS CONTROL MODERN INDUSTRIES**

When inquiring specify CP A1771... see information request blank, pgs. 2-3



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YOUR PRODUCTS  
Lower  
PRODUCTION COSTS**

Through continuing research in a well-equipped laboratory, you achieve new processing efficiency—better products at lower production costs—and develop profitable new products.

But don't hamstring your research men by giving them anything less than the best in equipment. Give them Steelab—the only laboratory furniture with all these exclusive features:

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## INSTRUMENTS

### Electric Speed Indicator

*Low cost unit for broad field of applications; pick-up windings are stationary; no commutators, no slip rings, no conduits required*

**Uses** — This speed indicator is for determining and setting proper operating speeds in a broad field of applications. **Features** — Meets requirements where installation of such instruments have not generally been economically practical. No commutators or slip rings.

**Description** — This speed indicator gives accurate readings of speeds from 100 rpm to 500 rpm. It consists of two units. The pick-up unit, a miniature six-pole alternator with a permanent magnet rotor is mounted on the shaft whose speed is to be measured. The indicator, a permanent magnet moving coil type, meters the pick-up output on a 3 3/3 inch scale which covers 95° of arc. The resistance of the indicator has been made sufficiently high, so that the size or length of the leads connecting the units will have no effect on accuracy, and the indicator may be located at any distance from the pick-up unit. The indicator is not effected by other magnetic material, and there is no loss of accuracy due to length of service. Instantaneous and continuous speed indication is independent of the direction of rotation of the shaft. Pick-up windings are stationary, and there are no commutators or slip rings. No conduits are required. Lifetime lubrication simplifies maintenance. Special design of the indicator for flexibility is another feature. Fool-proof shaft coupling is provided, and the indicator may be bracket or panel mounted. Indicators are provided for full-scale deflection correspond-



*Heroes  
AT WORK*

**For MOM . . . It's INSPECTION  
For HER son . . . it's FIGHTING**

And together they do a grand job. For MOM is on the job, every day, inspecting each thermometer before it can be shipped and nothing gets by her eagle eye. It's folks like this, who are imbued with a spirit of loyalty to our firm who are responsible for the fine Thermometers that help you make a finer product.

Remember, in post-war plans, only GOOD Thermometers should be considered in rebuilding your future sales.

Clip this ad as a reminder. (Catalog on request)

**THE PALMER CO. Mfrs.**

Industrial, Laboratory, Dial & Recording Thermometers

2519 Norwood Ave., Cincinnati, Norwood, O—Canadian Plant: King & George Sts.

Toronto

When inquiring specify CP A1773 — see information request blank, pgs. 2-3



**ALL ELECTRIC  
FLOATLESS**

**LIQUID  
LEVEL  
CONTROLS**

These are the original electric liquid level controls, pioneered by us in 1933. They have no floats — no vacuum tubes — no moving parts in the liquid. They control variations of levels of 1/4" or more, and are not affected by pressure, temperatures, acids or caustics. Relay can be located any distance from the electrode.

**WRITE FOR CATALOG**

New CATALOG 145 contains complete technical descriptions of the many types available, together with wiring diagrams for various installations. Get full information on B/W controls. WRITE FOR YOUR COPY TODAY!

**B/W CONTROLLER CORPORATION**  
2204 E. Maple Road, Birmingham, Mich.

When inquiring specify CP A1774 — see information request blank, pgs. 2-3

### **SURFACE PYROMETERS FOR EVERY PURPOSE**

The correct temperature of roll surfaces, masses of plastic materials and of mold cavities is vitally important in many processing industries. The routine use of a dependable surface pyrometer takes the guess-work out of such temperature determination. The Cambridge Surface Pyrometer is the ideal shop instrument for all these applications. It is accurate, rugged, quick acting and easy to use. The Roll Model is for checking surface temperature of still or moving rolls. The Needle Model is for within-the-mass temperature and the Mold Model is for checking mold cavities.

Send for bulletin 194CP

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ROLL • NEEDLE • MOLD  
**PYROMETERS**

**CAMBRIDGE INSTRUMENT CO., INC.**

**BUY  
WAR BONDS**

3732 Grand Central Terminal  
New York 17, New York

When inquiring specify CP A1775 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

When inquiring specify CP A1772 — see information request blank, pgs. 2-3



## INSTRUMENTS

ing to 1500, 2000, 2500, 3000 and 5000 rpm, and special scales are available to read in other units, such as feet per minute, and process cycles of varying times.

ELIANCE ELECTRIC & ENGINEERING CO., Dept. CP, 1088 Ivanhoe Road, Cleveland, Ohio.

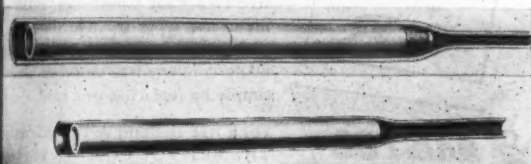
When inquiring specify CP A1776 — see information request blank, pgs. 2-3

### Combustion Tube Assembly

*For carbon and sulfur determination in metals and other combustible materials*

**Uses** — For carbon and sulfur determination in metals and other combustible materials.

**Description** — Two lengths of cylindrical tube liners are inserted within the combustion tube. The combustion tube assembly is inserted within a high temperature laboratory furnace. The boat containing the weighed sample is



CARBON & SULFUR COMBUSTION TUBES

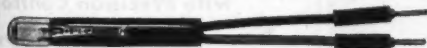
placed within the liner at the center of the combustion tube. This center liner will protect the combustion tube from the metal and slag splatter. When the center liner becomes so full of splatter that it interferes with the boat passage, it is removed and a new liner is inserted. The life of the combustion tube is materially increased when liners are used. This combustion tube assembly makes for time saving and more economy than the practice of using boat covers. Illustration shows: top — No. 3127 sulfur combustion tube with two No. 3057 liner shields; bottom — No. 3026 carbon combustion tube with two No. 3057 liner shields.

HARRY W. DIETERT CO., Dept. CP, 9330 Roselawn Ave., Detroit 4, Mich.

When inquiring specify CP A1777 — see information request blank, pgs. 2-3

### Voltage Tester Weighs 3 Ounces

*Handy for testing 5 to 50 volts, AC — DC*



POCKET SIZE VOLTAGE TESTER

**Uses** — For testing low voltage circuits, 5-50 v., AC-DC. Simplifies testing of open circuits, burned out fuses and can be used for indicating the relative value of line voltage.

**Features** — Compact, overall length is only 7 inches; fully insulated test leads are 4 inches long.

**Description** — Transparent protective housing completely protects incandescent lamp. Chrome plated clip protects against loss. Weight 3 oz. Failure of bulb to light indicates broken circuit; brightness shows value of voltage. Complete information on request concerning "Lo-Volt Test-Glo."

IDEAL COMMUTATOR DRESSER CO., Dept. CP, Sycamore, Ill.

When inquiring specify CP A1778 — see information request blank, pgs. 2-3

MAY-JUNE, 1945



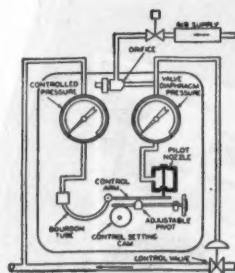
**Here's a simple, rugged controller that gives you**

**ACCURATE PRESSURE CONTROL AT LOW COST**

The Masoneilan No. 2500 Pressure Controller gives plants accurate, dependable instrument control at a price no greater and often at a lower cost than other less efficient methods.

Typical pressure control applications where these controllers are improving quality include — reducing service on primary or auxiliary steam lines, turbine or bleeder make-up, pump discharge pressure control, heating and evaporating systems. The No. 2500 is available for control of pressures between 30 inches vacuum and 500 pounds.

Masoneilan No. 2500 Pressure Controllers are rugged, simple and economical to operate. And although they are relatively inexpensive, they are built to the same high standards of quality materials as all other Masoneilan equipment. Bulletin 2500 gives the entire story. Write for your copy today.



MASONEILAN

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When inquiring specify CP A1779 . . . see information request blank, pgs. 2-3



## Flame-otrols safeguard furnaces at "Tube Turns"

Another of the well-known companies that have found it pays to install the finest available combustion safeguard equipment is Tube Turns, of Louisville, Ky.

A subsidiary of Girdler Corporation, this company operates one of the most modern aluminum forge plants in the country, for producing aircraft engine cylinder heads, pistons and other parts.

Dual furnaces for heat treating and ageing forgings are each equipped with three Wheelco Flame-otrols,



which in case of burner failure automatically shut the fuel supply off to the heater, providing a time delay for purging the furnaces and requiring manual re-ignition of the burners. The Flame-otrol shuts the heater down by opening the circuit to a solenoid valve installed in the fuel line. The furnaces operate on fuel oil. Wheelco Capacitrols are also used to regulate furnace temperatures in the plant. For data on Wheelco "Electronic Control Principle" instruments, ask for new Condensed Catalog Z6300.



When inquiring specify CP A1780 — see information request blank, pgs. 2-3

## INSTRUMENTS

### Magnetic Comparator Tests Rods, Bolts, Spring, Fabricated Parts

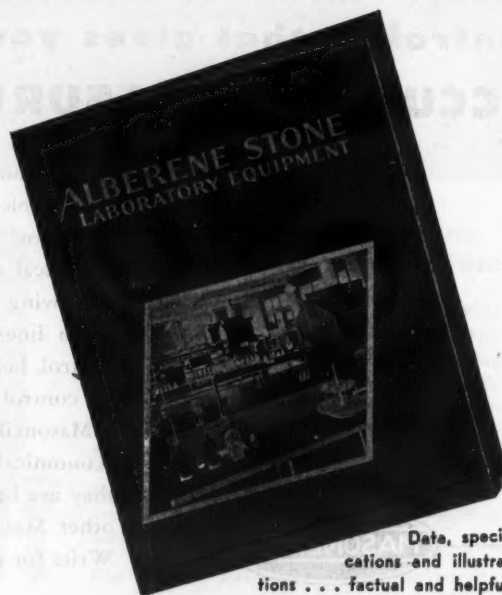
*Redesigned model has graduated dial plates on the sensitivity and balance control rheostats to allow duplication of settings*

**Uses** — Quick, simple nondestructive method of inspecting ferrous parts for quality control: rods, bolts, springs, and small fabricated parts.

**Features** — This comparator has been redesigned and its features include an attractive gray steel case with a sloping front panel on which are located the indicating instrument, variable voltage transformer, and the necessary rheostats and switches. Graduated dial plates on the sensitivity and balance control rheostats have been added to allow duplication of settings. In addition, a light now indicates whether power is on. Receptacles for making connections to the test fixtures and power source are now located at the back of the case, thus keeping wires out of the operator's way and allowing a clear view of the indicating instrument.

**Description** — The redesigned instrument incorporates all the basic functions of the previous model. The circuit is balanced by placing an acceptable part in each of the test fixtures. One of these parts is then removed and those to be tested are individually inserted. A few typical applications — this comparator has separated: (1) Compass shafts of Rockwell C — 53, 57 and 63 on the basis of hardness. (2) Steel blocks NE — 8827 from NE — 8620 and SAE — 1035 from SAE 4120. (3) Steel springs of

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Data, specifications and illustrations . . . factual and helpful . . . about Alberene Stone, the material that outlasts the building.

**ALBERENE STONE CORP. OF VIRGINIA**  
419 4th Ave., New York

When inquiring specify CP A1781 — see information request blank, pgs. 2-3

### Convertible Free-Vane Controllers Meet Your Automatic Control Requirements



*The instrument:* Bristol's air-operated Free-Vane Controller, available in five types for five different control requirements. Each type is easily converted to another type simply by replacing one unit.

For a free Bulletin A-112, address THE BRISTOL COMPANY, 141 Bristol Road, Waterbury 91, Conn.



### AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS

When inquiring specify CP A1782 — see information request blank, pgs. 2-5

### "Anets" LABORATORY CABINETS

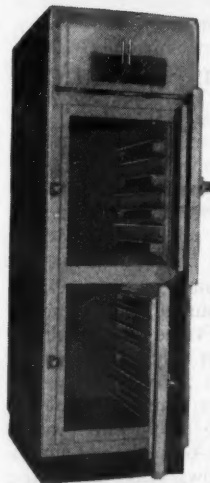
*Automatic Control*



### PROCESSING ★ TESTING with Precision Control

★ Use these "Anets" Laboratory Cabinets to control processing, fabrication and manufacturing to exact standards. Save time and money wasted by sub-standard and all-tolerance fabrication.

More — get finger-tip automatic control of all temperature and humidity conditions within a few degrees. Write for Bulletin No. 178 today.



★ Processing fabric plastics  
★ Testing electrical equipment and aircraft parts

★ Incubation, germation, bacterial culture  
★ Weathering, Moisture control

**ANETSBERGER BROTHERS**

3322 Elston Avenue  
Chicago 18, Illinois

When inquiring specify CP A1783 — see information request blank, pgs. 2-3



## INSTRUMENTS

Rockwell 25 to 35 C from Rockwell 45 C. The coils are available in a variety of diameters. For satisfactory operation the parts to be tested should be more than one half the length of the coil, and the greatest sensitivity is obtained when the coil diameter is only slightly larger than the part being tested. For special cases such as small forgings, a pair of gage heads, which rest on the surface of the parts being compared, can be used instead of the coils. Each gage head consists of a small metal spool with a handle through which the electric connector to the comparator is made. Both the coils and the gage heads are interchangeable and are supplied complete with flexible leads and connectors. Comparator readings represent the property of the material near the surface of the sample and may not indicate the physical condition of the center section of the cross-sectional area. The depth of penetration for both coil and gage heads is approximately 40 mils (0.004 inch). Bulletin GEA — 4169 gives complete details and shows how unit operates by means of several illustrations.

GENERAL ELECTRIC CO., Dept. CP, Schenectady, N. Y.

When inquiring specify CP A1784 — see information request blank, pgs. 2-3

### Electronic Control Signal Unit

*Indicates exact level of aqueous liquids and warns of changes*



BELL & LIGHT SIGNAL UNIT

**Uses** — In plant processing, liquor blending, many mixing operations and where liquid levels are changing frequently and attendants are at hand. Indicates exact level and warns of any changes in level.

**Features** — Installation requires connection of only four wires. Unit may be located up to 50 feet from container under control.

**Description** — With two stainless steel electrodes this unit (Model FSB) gives constant index of level. Gong rings and top (red) light burns when tank becomes too full. Gong rings and light (amber) burns when liquid drops below high level and at low level gong and light (green) operate in similar fashion. Gong may be cut off at any level by toggle switch which does not effect the next contact operation or the lights. Steel case 12"x10"x5 1/2" with hasp-locked cover contains the complete electronic unit, light circuits and four inch gong.

LUMENITE ELECTRONIC CO., Dept. CP, 407 S. Dearborn St., Chicago 5, Ill.

When inquiring specify CP A1785 — see information request blank, pgs. 2-3

For complete information regarding products described in this issue a handy request slip is provided between pages 2 and 3. Check the items that interest you, fill in name and address and send it to publishers. Information will come to you promptly.

# ANNOUNCING



## NEW MODEL XX SARGENT HIGH SPEED VISIBLE-RECORDING POLAROGRAPH

... the latest development in polarographic instrumentation for fast, precise automatic determination of micro or macro quantities of metallic or organic constituents in simple or complex mixtures. The instrument incorporates a continuously balanced potentiometric strip chart recorder not affected by vibration. Recording of polarogram is always visible, permitting uninterrupted observation of every analysis from beginning to end. Complete information and price available on request.

metric strip chart recorder not affected by vibration. Recording of polarogram is always visible, permitting uninterrupted observation of every analysis from beginning to end. Complete information and price available on request.

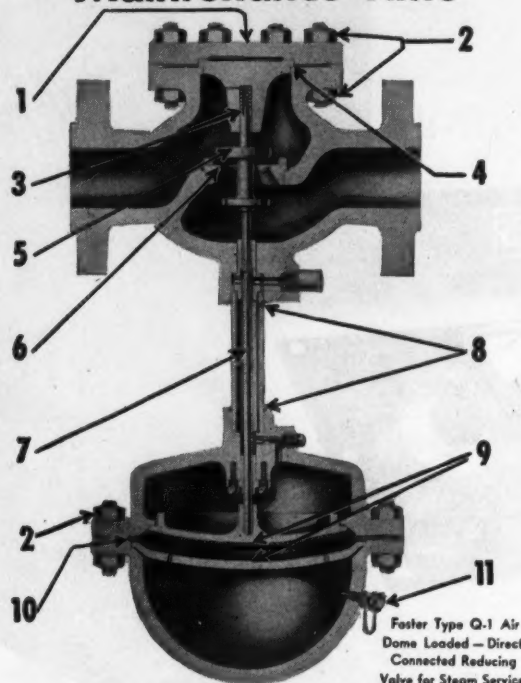
E. H. SARGENT & COMPANY, 155-165 East Superior Street, Chicago 11, Illinois  
Michigan Division: 1959 East Jefferson, Detroit 7, Michigan

**SARGENT**  
SCIENTIFIC LABORATORY SUPPLIES

When inquiring specify CP A1786 . . . see information request blank, pgs. 2-3

# FOSTER REGULATION ENGINEERING

**Saves  
Maintenance Time**



Foster Type Q-1 Air  
Dome Loaded — Direct  
Connected Reducing  
Valve for Steam Service

- 1 Major overhaul, when necessary, without breaking the line
- 2 All bolts are stud bolts — easily loosened
- 3 Guide and spring easily replaced
- 4 Ground joint — no gasket required
- 5 Main valve accessible — easily re-seated
- 6 Main valve seat ring replaceable
- 7 Pushrod removed from lower end
- 8 Brazed — no packing required
- 9 All smooth contact surfaces for diaphragm
- 10 Diaphragm unit can be removed without disturbing rest of valve
- 11 Air fitting replaceable

Foster Regulation Engineering, built into each valve, is your assurance of years of accurate trouble free operation.

**FOSTER ENGINEERING**  
124 MONROE STREET, NEWARK, N. J. *Company*

5-FE-6

When inquiring specify CP A1787 — see information request blank, pgs. 2-3

## INSTRUMENTS

### New Type of Flow Indicator

A new catalog describes the Rotasight Flow Rate Indicator. This little instrument indicates the true flow rate, even though it is very compact and comparatively inexpensive. The Rotasight operates on the rotameter area-type principle and has a V-ported transparent metering tube with a float which rises in direct proportion to the flow through the meter. The catalog is profusely illustrated, and describes construction details and applications of the instrument in a very clear manner. It also gives engineering dimensions, flow capacities and prices.

One of the most interesting applications described is the use of the Rotasight as a flow rate alarm. The alarm is operated by flow rate changes only and is equally sensitive at all points in its flow range because of its straight line calibrations. In writing, ask for Bulletin 92-C.

FISCHER & PORTER CO., Dept. CP, 945 County Line Rd., Hatboro, Penna.

When inquiring specify CP A1788 — see information request blank, pgs. 2-3

### Sapphire Plug and Ring Gages

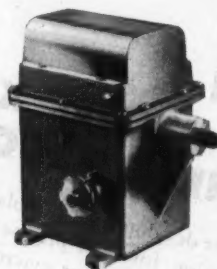
*Negligible wear, tolerances adequately retained after gaging thousands of parts*

**Uses** — Sapphire for the unusual requirements imposed by speedy, un-interrupted war production, plug and ring gages not affected by any chemical ordinarily encountered in gaging; stand up remarkably well under ordinary shock of handling in use. Now in use in numerous war contract operations.

**Performance** — Outlast hardest steel alloy and cemented

## BARBER-COLMAN

### POWER UNITS



Write for  
Bulletin F-1912  
"POWER UNITS"

#### TO POSITION VALVES, DAMPERS, AND OTHER UNITS

These POWER UNITS are ideally suited for industrial applications. They feature built-in limit switches and a high torque motor with gear reduction, oil submerged, for long life and dependable operation. Control action may be governed by a recording or indicating controller or other contact making control instruments.

POWER UNITS are available for "on-off", floating, and proportioning modes of control, including proportioning with manual or automatic resetting.

#### BARBER-COLMAN COMPANY

1201 ROCK ST. • ROCKFORD, ILL.

When inquiring specify CP A1789 — see information request blank, pgs. 2-3

## What Time Operations are you controlling or wish to control

**ELECTRICALLY?**

Advise us and our Engineers will forward you the proper interesting Bulletin covering this particular case, — free of obligation.

**We specialize in this subject.**

Unquestionably we can assist you to streamline your equipment to look better — do a more efficient job — be more accurate and reduce your expense.

**Write today for one of these interesting Bulletins.**



**The R.W. CRAMER COMPANY, Inc.**

(Electrical Timing Headquarters)

When inquiring specify CP A1790 — see information request blank, pgs. 2-3

## Alnor PYROCON

**the contact  
pyrometer  
for surface temperature  
readings...**

The Alnor Pyrocon gives you accurate temperature readings in a few seconds, of liquids, oils, plastic materials, or surfaces, whether flat or curved, stationary or moving. The Alnor Pyrocon movement is a rugged, shock resistant type and is used with any one of several types of thermocouples, interchangeable without adjustment or re-calibration. Either rigid or flexible arm, and choice of thermocouple allows meeting any individual needs. Built in several standard ranges, 0-400 deg. F. to 1000 deg. F. Write for descriptive bulletins.

**ILLINOIS TESTING LABORATORIES, INC.**  
420 NORTH LA SALLE STREET • CHICAGO 10, ILL.

When inquiring specify CP A1791 — see information request blank, pgs. 2-3



## INSTRUMENTS

carbide gauges. Large plant engaged in vital war work reported that these plug gages were gaging as high as 80,000 parts without showing wear. Gaging was subsequently increased to 158,000 and check at that time indicated that wear was not appreciable, about 0.00001 of an inch, well within tolerances. Formerly high speed steel gages had given 300 gaging. Sapphire ring gages used by this same factory served in gaging 25,000 shafts within three weeks, with no indication of wear. Gaging have now increased to 172,365 wear is less than 30 millionths of an inch for distance of 1/64 inches — well within tolerances. Another firm reports on its use for the past year of 0.0475, 0.0476, 0.0477, 0.0625, 0.0721, 0.0722 and 0.0723 sapphire plug gages in gaging internal diameters which must be lapped to a total tolerance of 0.0001 inch. The 0.0721 gage has averaged 500 gaging per working day for more than six months.

**Description** — Because of their extreme hardness plug and ring gages can be ordered to exact size needed, no wear allowance is required. They are not subject to burring so it is impossible to gage parts inaccurately because of unnoticed damage to gage.

ELGIN NATIONAL WATCH CO., Dept. CP, Aurora, Ill.

When inquiring specify CP A1792 — see information request blank, pgs. 2-3

## Poly Phosphate Comparator Makes Determinations in 20 Minutes

No prolonged boiling required; determination on cold sample gives ortho present



**Uses** — Simple, rapid accurate method of poly phosphate determination.

**Features** — Complete determination made in 20 minutes. All equipment in compact carrying case.

**Operation** — Previous methods

required several hours boiling to convert glassy phosphates to ortho form. With comparator described here complete determination is quickly made. After conversion, two reagents are added separately and the blue color formed is compared with the standards. This gives the total phosphate content. A determination on the cold sample (no boiling) gives the ortho present in the sample. The difference is the polyphosphate.

**Description** — This outfit is particularly suitable for service in plants where low concentrations of the poly phosphates such as hexameta, pyro, septa, etc. (threshold treatment) are in rather general use, as in power plants, air conditioning and refrigerating units, etc. and in process waters. The complete set includes a comparison block containing 8 standards, 0, 0.5, 1, 2, 4, 6, 8, 10 ppm, 2 comparison tubes, funnel, filter paper, graduate, flask and reagents. Dimensions of carrying case are 9 1/4 in. long, 6 1/4 in. wide and 9 in. high.

W. A. TAYLOR & CO., Dept. CP, 7300 York Rd., Baltimore 4, Md.

When inquiring specify CP A1793 — see information request blank, pgs. 2-3

# DO YOU NEED

## HYDROMETERS OR ETCHED STEM THERMOMETERS?



**COULD** you use some Hydrometers or Etched Stem Thermometers? Then it's a good thing you saw this ad! Taylor Instrument Companies are in a position to make good deliveries on both of these essential items in any reasonable quantity. Let us send you our latest revised catalogs and prices covering the complete lines of both Taylor Etched Stem Thermometers and Taylor Hydrometers.

**Hydrometers** are standard in the streamlined "Easy-kleen" pattern which permits instrument to sink rapidly to its floating point, and makes cleaning a simple process. Most of the hydrometers listed have Permax enameled flat metal scales which give three times the angle of vision of conventional paper-scale hydrometers. Furthermore it cannot slip, being firmly anchored in alloy weighting material. Excellent for temperatures up to 285°F.

**Etched Stem Thermometers** are available in a wide variety of types within limits of minus 200° and plus 510° centigrade or equivalent Fahrenheit. Mail coupon for either or both of these catalogs today!

**TAYLOR INSTRUMENTS MEAN ACCURACY FIRST!**



**BUY AN EXTRA WAR BOND TODAY!**

Taylor Instrument Companies  
Rochester 1, New York

Please send me your catalog on:

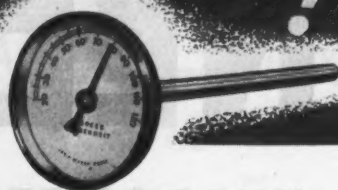
- ☐ Taylor Etched Thermometers  
☐ Taylor Hydrometers

Name .....

Address .....

When inquiring specify CP A1794 . . . see information request blank, pgs. 2-3

# READY!



## A Finer Bi-METALLIC Thermometer

as original equipment for the  
unit you're making  
or planning

**W**HATEVER equipment requiring temperature indication you are making now, or planning for the postwar market, our engineering department has a real message for you. We have developed a new bi-metallic dial thermometer — accurate, attractive, sturdy — yet available in quantities at a cost that you can justify in the most competitive market.

The illustration shows a typical thermometer with conventional scale, but we can work out special dials, ranges and forms that will "dress up" your product and suit its design. Temperature indication — particularly in this accurate, handsome form — is a sales-winning feature that adds little to your cost.

The Marsh line includes a wide range of equipment for process industries — dial thermometers in rigid stem and remote reading types, pressure gauges in practically all types and ranges, packless valves, traps, vents and other heating specialties.

Jas. P. Marsh Corp. 2095 Southport Ave., Chicago 14, Illinois

**A MARSH Instrument**

When inquiring specify CP A1795 — see information request blank, pgs. 2-3

## INSTRUMENTS

### Visible Recording Polarograph

*High speed; detects and identifies as little as one ten millionth of a gram; need for photographic development of polarogram eliminated*



CHART REMOVED immediately on completion of polarograms

**Uses** — A modern instrumental method of analysis for fast, precise, low cost determination of micro or macro quantities of metallic or organic constituents in simple or complex mixtures. This improved polarograph is particularly adapted for chemical analysis. Some of the applications of the Heyrovsky polarographs now in use are — analysis of waters for trace constituents, observation of deterioration of transformer oils, organic research; analysis of: brass, ferrous alloys, lead alloys, metallic impurities in aluminum, lead and zinc in paints, major constituents in plating solutions, ceramics and glasses, raw materials for production of rubber, foods, paper ash and pulp liquors. Pharmacology applications: plant extracts, insulin, ascorbic acid, starch, etc.; Biochemistry: vitamins, hormones.

**Features** — Analyses may be completed in minutes instead

## "What an Outstanding LABORATORY!"

You Can Have One, Too

"Outstanding" — That's the comment you invariably hear when Kewaunee Engineers have completed the installation of —

**Kewaunee**

CASES, CABINETS AND FURNITURE

Three factors make Kewaunee Laboratories "outstanding."

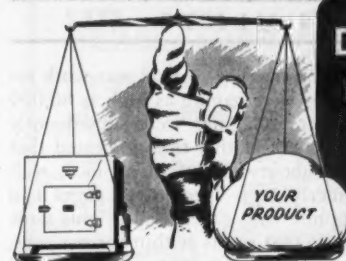
- First** — Kewaunee has had 40 years of experience in the designing and production of fine quality furniture for America's most famous Laboratories.
- Second** — Kewaunee Engineers are always in close touch with Laboratory Problems and benefit by the helpful counsel of America's leading Laboratory Technicians. That's why Kewaunee Equipment insures top efficiency through time-saving conveniences.
- Third** — Kewaunee's Unit Assembly Plan not only lowers production costs, but gives that uniform, streamlined appearance so "outstanding" in the finished job.

Write us your requirements. Address —  
INDUSTRIAL DIVISION

**Kewaunee Mfg. Co.**  
LABORATORY FURNITURE EXPERTS  
C. G. Campbell, President

5011 S. Center St., Adrian, Mich.  
Representatives in Principal Cities

When inquiring specify CP A1796 — see information request blank, pgs. 2-3



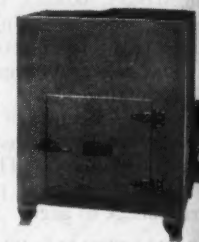
**DESPATCH  
Laboratory  
OVENS  
ASSURE**

## ACCURATE TESTS for PRODUCT CONTROL

• Huge losses or impressive savings in manufacturing often depend solely on the accuracy of production control.

That's why Despatch laboratory and analytical ovens are first choice in so many industries.

Unfailing accuracy over a wide heat range...  $\pm 1^\circ \text{C}$ . heat uniformity... fast recovery — these are just a few of the reasons why your laboratory should specify "Despatch."



SEE YOUR LOCAL DEALER TODAY!

**DESPATCH**  
OVEN COMPANY MINNEAPOLIS 14, MINNESOTA, U.S.A.  
WRITE for Bulletin 101

When inquiring specify CP A1797 — see information request blank, pgs. 2-3

## ACCURATE LIQUID LEVEL INFORMATION AT A GLANCE, WHEN YOU WANT IT



WITH  
**LIQUIDOMETER Tank Gauge**

"THEY'RE ALWAYS DEPENDABLE"

100% automatic.

No pumps, valves, or auxiliary units needed to read them.

Models available for either remote or direct readings.

Accuracy unaffected by specific gravity of tank liquid.

Approved by Underwriters' Laboratories for gauging hazardous liquids.

Write for complete details.

THE **LIQUIDOMETER** CORP.  
38-18 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

When inquiring specify CP A1798 — see information request blank, pgs. 2-3



## INSTRUMENTS

of hours. Small sample requirement. Accuracy. Wide adaptability. In the new Model XX Polarograph higher standards of performance and versatility than heretofore available are provided. Sensitivity is not affected by extraneous vibration . . . achieved by elimination of galvanometric elements. This new instrument eliminates the need for photographic development of polarograms. Chart recording makes polarograms instantly and continuously visible from beginning to end of analysis. Visible chart recording permits prompt readjustment of operating conditions at any stage in the progress of the polarograms. It is unnecessary to wait until the determination is completed. The polarogram produced is a true continuous record of the current voltage curve as contrasted to a record obtained from intermittent recorders which do not faithfully and completely reproduce current voltage curves. With a chart size of 28 cm, step heights of polarograms can be made very large, so making possible more precise analyses by permitting greater accuracy in reading of step heights. Also as important corollaries to large step heights are ease and rapidity of making linear measurements. Since the polarographic bridge and the chart are driven by individual motors, it is possible to make continuous records of different currents at different voltages. These diffusion rates are functions of time and the polarograms may be used to study reaction of kinetics, rates of corrosion and such things as polymerization.

**Description** — The polarograph is an instrument for recording the current voltage curve characteristic of a solution when it is electrolyzed with the dropping mercury electrode. The electrode is an essential of polarographic analysis. It consists normally of a very fine bore capillary tube connected by a neoprene tube to a mercury reservoir and placed in the solution so that very fine drops of mercury are formed beneath the surface. The rate of flow of mercury may be adjusted by varying the height of the mercury reservoir and normally amounts to a drop every one to three seconds. The mercury reservoir is connected to one terminal of the polarograph and the other terminal of the cell is usually the pool of mercury in the bottom of the solution vessel. Some operators prefer to use a calomel cell connected to the solution through a suitable salt bridge as the second electrode of the cell. This has the advantage of referring the half-wave potentials of the reducible constituents of the solution directly to the calomel electrode. To develop the current voltage curve through the cell, it is necessary to know what voltage is applied and what the current is. In this Model XX the voltage is applied through a motor driven bridge which moves synchronously with the recorder chart. The current is measured by passing the current from the cell through a resistance and measuring the voltage developed across the resistance by means of a sensitive recording potentiometer. Model XX is complete with three vessels; electrode, 21 cm capillary tubing, mercury reservoir, stoppers, Neoprene tubing, connecting wires, chart paper, ink, pens, tool kit. Operation from 115 V., AC 60 cycle circuits.

E. H. SARGENT & CO., Dept. CP, 155-165 E. Superior St., Chicago 11, Ill.

When inquiring specify CP A1799 — see information request blank, pgs. 2-3

### Charts on Illumination Values

Reflector type lamps for industrial and commercial lighting installations are described in booklet prepared for lighting engineers. It features a set of charts containing illumination values based on various spacings and mounting of lights.

WABASH APPLIANCE CORP., (Birdseye Lamp Sales Div.), Dept. CP, 345 Carrol Street, Brooklyn 31, N. Y.

When inquiring specify CP A1800 — see information request blank, pgs. 2-3

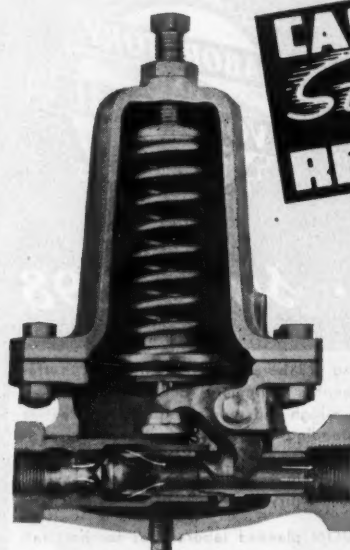
MAY-JUNE, 1945

# REGULATION...

- " "I wanted a valve with a large capacity and close regulation. This valve is doing a fine job for us."
- " "Our '1000' Streamliner regulates accurately and has required no attention whatever."
- " "We wanted sensitive regulation and the Streamlined Valve gives it to us."
- " "Our Maintenance Superintendent has often spoken about your '1000' valve and commented on how well it held its regulation."
- " "My object in buying was for close pressure regulation, therefore I choose the LP1000 valve which is giving entire satisfaction."
- " "We needed a valve able to handle a large demand and still give good regulation at all times. The '1000' is doing a fine job."

# PERFORMANCE

- " "We have had no maintenance whatever on these '1000' valves although there are a number of them installed."
- " "Your valves have been very satisfactory. They have not required any attention."
- " "I've never had to touch one of these '1000' valves after it was installed."
- " "We have had your valves in operation for several years and have never required parts, diaphragms, or attention of any sort."
- " "We continue to buy your '1000' valves because we must have equipment that requires little or no attention. Your '1000' valves fill the bill."



**CASH STANDARD**  
*Streamlined*  
**PRESSURE REDUCING VALVE**  
TYPE 1000

...and they all talk  
about these points too  
SMOOTH OPERATION • TIGHT CLOSURE • ELIMINATION OF FAILURES • CONSTANT DELIVERY PRESSURE • NO SPOILAGE • SPEEDIER PRODUCTION RESULTS • COST-SAVING OPERATION

WRITE FOR BULLETIN "1000"

Straight Line Flow: steam, water, air, oil, etc. flow through this valve in a straight line—nothing is in the path of flow to cause turbulence—therefore, peak flow is never a problem.

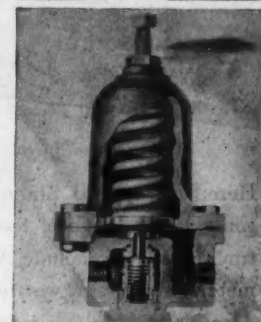
Bulletin "1000" gives the details.

**CASH STANDARD**  
**CONTROLS..**  
**VALVES**

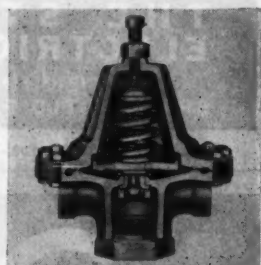
**A. W. CASH COMPANY**  
DECATUR, ILLINOIS

When inquiring specify CP A1801 . . . see information request blank, pgs. 2-3

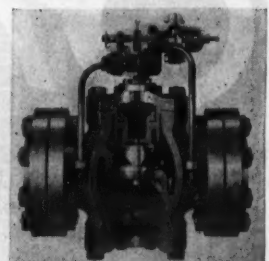
**OTHER VALVES**  
from the  
**CASH STANDARD**  
LINE



High Pressure Reducing Valve Type H-P; extra heavy for use with initial pressures up to 5000 lbs.; and for reduced pressures up to 650 lbs. Good for most fluids. Sizes: 1/4" to 2"; bronze body; nitralloy trim. Get Bulletin 931.



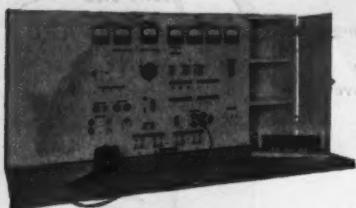
Type 8871 Pressure Regulator for dirty liquids (like Sunker C fuel oil). Inner valve is bolted to diaphragm for positive movement. Sizes 1/2" to 10". Bodies: iron, bronze, or steel. Seat ring and inner valve: stainless steel. Bulletin 972.



Cash Standard Type 10 Pressure Regulating Valve, pilot operated. (Pilot operating fluid discharges to outlet pipe; not wasted). Sizes: 2" to 12". Highest pressures: inlet 600 lbs.; reduced 250 lbs. Iron, bronze, or steel bodies; standard trims. For water, air, non-corrosive gases and oils. Get interesting Bulletin 966.



## ELECTRICAL MAINTENANCE



### MOTOR ANALYZER and TEST BENCH

Here is a typical Standard Electric test bench for general maintenance, testing and motor repair. Features available include AC and DC voltmeters, ammeters, ohmmeter, wattmeter and power factor meter. Also 2000 volt step-up transformer, 40- and 100-watt fluorescent lamp test, continuity circuit tester and many other maintenance and test features. Write for complete data to CP-22.

### THE STANDARD ELECTRIC TIME CO.

"Specialists in this Line"  
SPRINGFIELD 2, MASSACHUSETTS

When inquiring specify CP A1802 — see information request blank, pgs. 2-3

## INSTRUMENTS

### Electronic Motor Controls

*Includes units up to 500 HP; stepless speed control; compensated for IR drop in motor armature, automatically timed tube heating*

**Uses** — These electronic motor controls provide any direct voltage from 0-270 volts, or from 0-600 volts according to the type selected. (This line of electronic units also includes low cycle converters to replace 15 cycle MG sets for the operation of vibrating screens used in screening ores and other operations; 180 cycle converters used, among several applications, for operation of high cycle tools and available in required sizes.)

**Features** — By the "Varitronic" method — practically straight line DC power at any speed keeps motors cool, power factor high, maintenance down. Low cost long life tubes with ample overload ability. No limit to size of units available.

**Description** — Unit rectifiers give dependable service where direct current is required. They are made in all voltages to supply direct current for magnetic equipment, traveling cranes, elevators, welding, plating and chemical uses. The saving in copper and steel alone is large compared to that used in motor generator sets. These rectifiers operate in parallel. The low cycle converters referred to provides 1800 VPM or less from a 60 c. line. Both half-wave and full wave models. The 180 cycle converters provide constant frequency, and flexibility; any percent of regulation desired is possible. Other frequencies from this type of converter are also possible, such as 400-3000 cycles per second. One



### Industrial THERMOMETERS

... OF LABORATORY  
ACCURACY

Where problems are encountered in maintaining, checking or controlling vital heating or cooling operations, H-B Thermometers provide an effective solution. These time-proved instruments are precision engineered to meet the toughest industrial needs for accuracy, endurance and trouble-free operation. Being highly sensitive to temperature change, H-B Thermometers help make production operations temperature-perfect. For information and prices, write for Bulletin 3 — H-B Instrument Company, 2510 No. Broad Street, Philadelphia 32, Pa.



THERMOMETERS • THERMOSTATS • RELAYS  
THERMO-REGULATORS • HYDROMETERS

When inquiring specify CP A1804 — see information request blank, pgs. 2-3

## TEMCO ELECTRIC FURNACE

MODEL GRP

FOR HEAT TREATING  
SMALL TOOLS AND  
PARTS, TESTING AND  
LABORATORY WORK.

**FAST HEATING**—1500° F. in 30 min. Temperature controlled by four point switch set for 500°, 1000°, 1500° and 1850° F.

These settings easily changed by adjusting bands on rheostat coils. Dependable indicating pyrometer is calibrated in both Fahrenheit and Centigrade scales.

**UNIFORM TEMPERATURE**—Heating element of highest quality nickel-chromium alloy forms a continuous coil and is embedded in sides, top and bottom of muffle chamber. This construction assures uniform temperature and protects element from damage and oxidation. Complete muffle unit is replaceable.

**PORTABLE**—Body is aluminum. Total weight, 17 lbs. Muffle chamber, 4" x 3 3/4" x 3 3/4"; furnace overall, 9 1/4" x 13 1/2" x 10 1/2". Supplied with attachment cord. Operates on A.C. and D.C., 115 or 230 V. (be sure to specify voltage). Max. power consumption 1200 watts. Model GRP complete, 115 V. \$42.50; 230 V. \$47.50. See your supply house or write

THERMO ELECTRIC MFG. CO., 476 W. Locust St., Dubuque, Ia.

When inquiring specify CP A1805 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

# Sheldon



... Since 1898

Planning a laboratory is not merely a matter of selecting equipment, but a task that demands a high and specialized type of creative understanding, skill, and long practical experience. Only complete integration of every part, invisible as well as visible, can achieve maximum utility.

SHELDON planned laboratories for hospitals and schools are a matter of public record. What we have done for others is a dependable index of what we can do for you. We'll be happy to work with you.

E. H. SHELDON & COMPANY  
MUSKEGON, MICHIGAN

When inquiring specify CP A1803 — see information request blank, pgs. 2-3



## INSTRUMENTS

unit in the new line of controls in sizes up to 500 HP is 25 HP model for driving a direct current motor from a phase AC line and obtaining a wide stepless speed adjustment directly from the motor shaft. In addition to the advantage of stepless speed control, the unit is compensated for IR drop in the motor armature and will maintain practically straight line regulation over wide changes in load. It also includes reversing, dynamic braking, controlled and adjustable acceleration, inching forward or reverse, preset speed, automatically timed tube heating, overload, undervoltage, field failure. Other units available in any size up to 500 HP. These units may be operated in any position and without any foundation. They will provide any direct current voltage from 0-270 volts or from 0-600 volts according to type selected. Complete Bulletin giving complete details of various "Varitronic" units is available on request. It includes data on the "Varitronic" control for complete RPM control; Tubeless motor controls and special units for testing gasoline gas motors, starters, etc.

ELECTRON EQUIPMENT CORP., Dept. CP, 917 Meridian Ave., So. Pasadena, Calif.

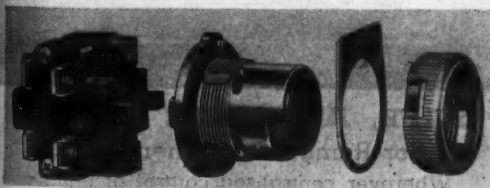
When inquiring specify CP A1806 — see information request blank, pgs. 2-3

## Oil-Tight Pushbuttons for Group Mountings

*Separate operating mechanisms, contact blocks permit combination for range of circuit requirements with few operators and blocks*

**Uses** — These oil tight pushbuttons are designed primarily for group mounting on machinery or control enclosures.

**Features** — In addition to oil tightness these units are more compact and can be mounted on closer centers than previous types without sacrifice of accessibility. All terminal screws can be reached with a screw driver without going in at an angle.

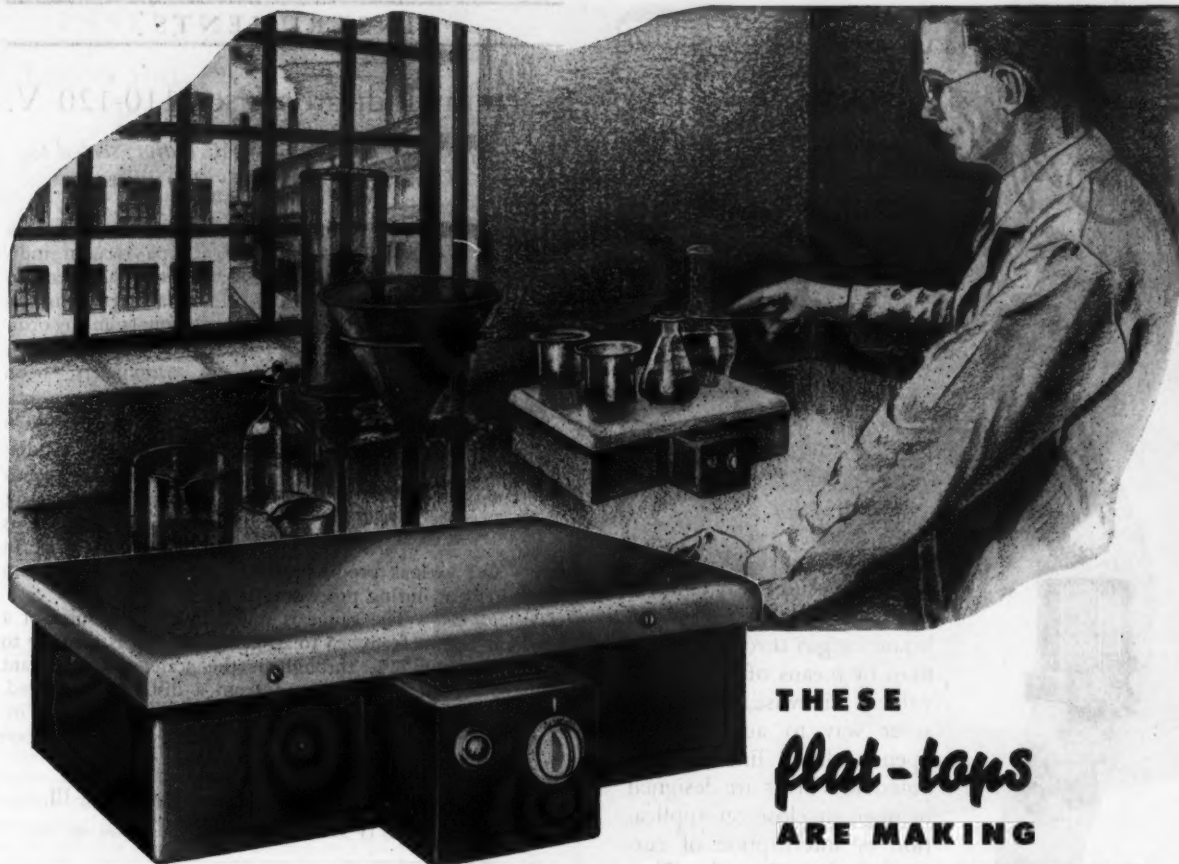


PUSHBUTTON designed for easy installation

**Description** — This addition to maker's line of pushbuttons is identified as Class 9001 — Type T Oil-Type Pushbuttons. As indicated in the illustration, the unit is inserted through the panel and prevented from turning by a dowel. After the legend plate is slipped on, a thread ring firmly clamps the unit into position. Since the operating mechanism and contact blocks are separate units, it is possible to obtain a combination to cover a wide range of circuit requirements with a limited stock of three types of operators and four types of contact blocks. Bulletins on request.

SQUARE D CO. (Industrial Controller Div.), Dept. CP, 441 N. Richards St., Milwaukee 12, Wis.

When inquiring specify CP A1807 — see information request blank, pgs. 2-3



## THESE flat-tops ARE MAKING LABORATORY HISTORY

The new Lindberg Laboratory Hot Plates are engineered and built to do precise, controlled laboratory work. The built-in input control enables the operator to raise or lower the plate temperature to any degree of heat up to 950° F. Convenient, accurate and economical for all laboratory jobs such as boiling, evaporations, heating, etc.

The coiled nickel-chromium wire elements spaced evenly, heat the entire surface of the top plate. They are protected and kept in place by refractory type holders. The top plate is of a special cast alloy able to resist growth, warpage and corrosion. In three standard sizes: 10" x 12", 12" x 20" and 12" x 30".

Other Lindberg Laboratory Furnaces shown are the Pot-Crucible, the Combustion Tube and the Box Furnace. See your laboratory equipment dealer for full information.

LINDBERG ENGINEERING COMPANY  
2450 WEST HUBBARD STREET • CHICAGO 12, ILLINOIS

# LINDBERG

WELL KNOWN THROUGHOUT THE WORLD AS  
LEADERS IN DEVELOPING AND MANUFACTURING  
INDUSTRIAL HEAT TREATING EQUIPMENT

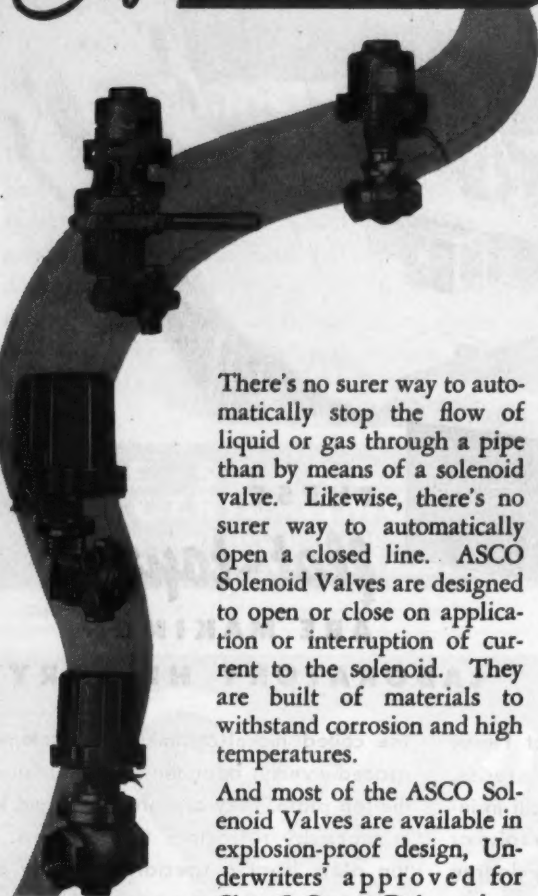
SOLD EXCLUSIVELY THROUGH LABORATORY EQUIPMENT DEALERS

When inquiring specify CP A1808 . . . see information request blank, pgs. 2-3

**Best  
Safe**

to Use for Automatic Control  
of Liquid or Gas Flow

to Use in Underwriters' Class I  
Group D, Hazardous Locations



There's no surer way to automatically stop the flow of liquid or gas through a pipe than by means of a solenoid valve. Likewise, there's no surer way to automatically open a closed line. ASCO Solenoid Valves are designed to open or close on application or interruption of current to the solenoid. They are built of materials to withstand corrosion and high temperatures.

And most of the ASCO Solenoid Valves are available in explosion-proof design, Underwriters' approved for Class I Group D hazardous

locations, making them safe to use in chemical plants.

Designing and making solenoid valves has been our business for more than forty years. We know solenoid valves and their proper application. Write us in detail about the flow of liquid or gas which you would like to have controlled automatically.



We also manufacture a quality line of Automatic Transfer Switches, Remote Control Switches, Contactors & Relays.

**Automatic Switch Co.**

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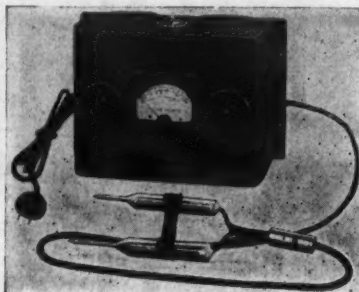
G-AB-1

When inquiring specify CP A1809 — see information request blank, pgs. 2-3

## INSTRUMENTS

### Vacuum Indicator Uses 110-120 V.

Operates from any ordinary AC outlet; scaled to read pressure from .25 - 250 microns



VACUUM INDICATOR

mins and various products which require critical vacuum measurement during processing.

**Description** — The gauge is scaled to read pressures of a vacuum system from .25 to 250 microns and is accurate to plus or minus 2% throughout the scale, with constant voltage. Meter may be read from a distance if desired. Gauge is unaffected by barometric pressure. Complete information on the "Tru-Vac" indicator is available upon request.

CONTINENTAL ELEC. CO., Dept. CP, Geneva, Ill.

When inquiring specify CP A1810 — see information request blank, pgs. 2-3

**Uses** — This new type vacuum indicator has been developed for operation from any ordinary AC outlet and is adapted for use in

mins and various products which require critical vacuum measurement during processing.

**Description** — The gauge is scaled to read pressures of a vacuum system from .25 to 250 microns and is accurate to plus or minus 2% throughout the scale, with constant voltage. Meter may be read from a distance if desired. Gauge is unaffected by barometric pressure. Complete information on the "Tru-Vac" indicator is available upon request.

CONTINENTAL ELEC. CO., Dept. CP, Geneva, Ill.

When inquiring specify CP A1810 — see information request blank, pgs. 2-3

### ONE CENTRAL SOURCE FOR Leading Makes of RESISTORS & RHEOSTATS



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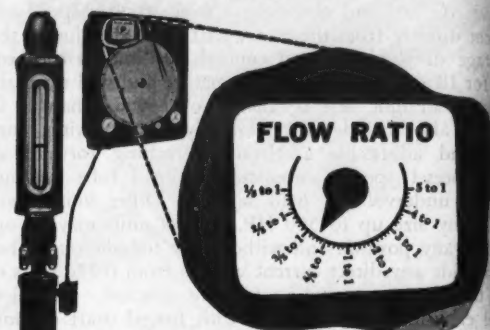
Everything in Radio and Electronics

**ALLIED RADIO CORP.**

833 W. Jackson Blvd., Dept. 17-E-5, Chicago 7

When inquiring specify CP A1811 — see information request blank, pgs. 2-3

### If you have the PROBLEM of proportioning two flows—



— here's the answer!

If you wish to keep one flow at a fixed percentage of a second variable flow, the new Rotamatic Ratio Flow Controller will do the job automatically for you. Furthermore the ratio may be varied at will by a turn of the flow ratio button. I we recording-controlling rotameters are used as the basic metering elements. The device for doing this remarkable job of proportional control is so simple and so positive that what was once a difficult control problem has become easy and also reasonable in price. The full and interesting details in regard to the new Rotamatic Ratio Controller are told in our bulletin 54-A which we will send to you without any obligation. Owing to the paper shortage, please send your request on your business letterhead.

**FISCHER & PORTER COMPANY**

4505 County Line Road, Hatboro, Pa.

When inquiring specify CP A1812 — see information request blank, pgs. 2-3

### SAFE, ACCURATE SYSTEM

For Remote Instrumentation!

Wherever centralized control of temperature, pressure, flow or liquid level is desired, Foxboro Pneumatic Transmission offers outstanding advantages. Recording, controlling or indicating instruments may be located up to 1,000 ft. from the measuring element, with only 1/4" copper tubing between. Fire hazard is entirely eliminated by all-pneumatic operation.

Write for detailed description and diagrams in Bulletin A307. The Foxboro Company, 190 Neponset Avenue, Foxboro, Mass., U. S. A. Branches in principal cities.

**FOXBORO**

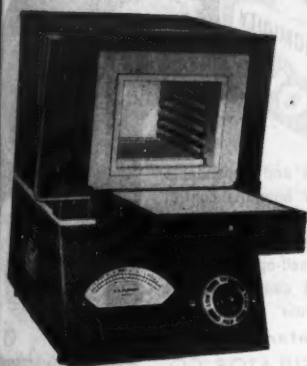
PNEUMATIC  
TRANSMISSION

for Remote Measurement and Control

When inquiring specify CP A1813 — see information request blank, pgs. 2-3



## STURDY - LOW COST LABORATORY FURNACE



3 HEAT  
RANGES  
0° to 1500° F.

110 Volt  
AC or DC

Complete  
\$41.25

The Model 2 Huppert Furnace is precision built to completely satisfy laboratory testing requirements and rugged enough to stand years of abuse in small batch production. Huppert quality insulation insures economy in operation. Comes complete with accurate pyrometer and porcelain tray. Counterweighted door. Fully enclosed contacts. Finish — black wrinkle. Inside dimensions  $4\frac{1}{2}'' \times 3\frac{1}{2}'' \times 4\frac{1}{2}''$ . Outside dimensions  $12'' \times 13'' \times 12''$ .

Request complete information on this and other Huppert Furnaces including range of production models.

**K. H. HUPPERT CO.**  
6822 Cottage Grove Ave., Chicago 37, Illinois

When inquiring specify CP A1814 — see information request blank, pgs. 2-3

## Now...Know in Advance the WEARABILITY of



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The Taber Test Proves What Wears Best!

When inquiring specify CP A1815 — see information request blank, pgs. 2-3

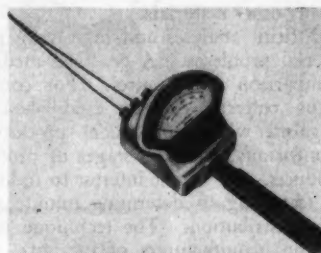
MAY-JUNE, 1945

## INSTRUMENTS

### Lance and Prod Type Pyrometer

Portable unit — weight  $13\frac{1}{4}$  lbs.  
designed for maximum reading ease

Uses — Particularly adapted for reading the temperature of molten metals, (exclusive of ferrous metals) hot air or liquids, hot surfaces, if used with the prod type thermocouple.



Pyrometer has shielded dial, reading accuracy to 2% of scale

Features — Body design elevates scale to angle for maximum reading ease; minimizes side reflections on scale glass. Shape guards glass from breakage, preventing contact with other objects when instrument is in resting position. Movement provides accuracy of reading to 2% of scale range. Duo scale is standard with readings of 0-500°F., and 0-1000°F., 0-750°F. and 0-1500°F., — or 0-1000°F., and 0-2000°F., or equivalent degrees Centigrade. Other scale special. Manual room temperature adjustment made by zero adjustment screw on face of meter. Instrument is light weight and has sturdy six inch handle.

K. H. HUPPERT CO., Dept. CP, 6830  
Cottage Grove Ave., Chicago, Ill.

When inquiring specify CP A1816  
— see information request blank, pgs. 2-3

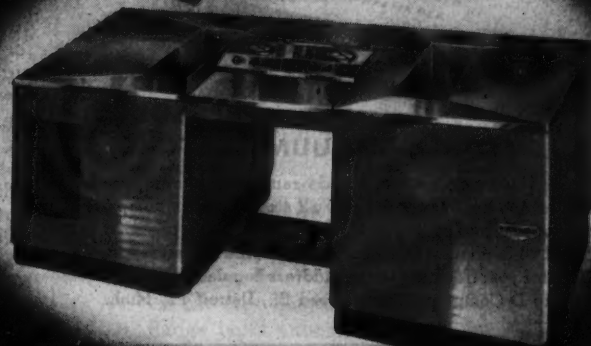
### Laboratory Tumble Jar — $1\frac{1}{2}$ Gal. Capacity

Illustrated bulletin gives complete information on a one and one half gallon tumble jar that will find a score or more of uses in the laboratory. It is equally efficient for tumbling solids, powders or dissimilar liquids and for mixing, blending, dispersion, solutions. It can be used as a ball mill. It has a large screw top  $5\frac{1}{2}$  inches in diameter for easy filling, emptying, cleaning. Jar is heavy molded glass. Tin foil lining for cadmium plated cover. Pressed steel in base, supports, jar truss. Rotating shaft has brass bearing surfaces. Overall dimensions  $13\frac{1}{2}'' \times 15$  inches and 15 inches high.

AMERICAN TECHNICAL CO., Dept. CP,  
532 Addison St., Chicago, Ill.

When inquiring specify CP A1817  
— see information request blank, pgs. 2-3

## SUB-ZERO for your RESEARCH LABORATORY



Sub-zero temperature processing has opened new vistas in the metallurgy of steel. Likewise in the crystallization of certain compounds, in the production of organic compounds such as dyestuffs, nitrocellulose and fine chemicals — also in the distillation of petroleum.

Have you investigated the possibility of using accurately controlled sub-zero temperatures in the processing and testing of your products? You can do this by providing your laboratory with a dependable Kold-Hold sub-zero or a dual temperature machine. You can then investigate processes over a temperature range from 200° F. down to -90° F. or lower.

Write for descriptive data on these units.

## KOLD-HOLD

440 NORTH GRAND AVENUE  
LANSING 4, MICHIGAN

When inquiring specify CP A1818 — see information request blank, pgs. 2-3



### PRESSURE, FLOAT & VACUUM SWITCHES

• SQUARE D offers a wide range of switches, designed and built for practically all sizes of water pumps, condensate pumps, vacuum pumps, and air compressors. You'll find this catalog a valuable source of reference. Send for your free copy today. Address Regulator Division, Square D Company, 6060 Rivard St., Detroit 11, Mich.



**SQUARE D COMPANY**

DETROIT • MILWAUKEE • LOS ANGELES

When inquiring specify CP A1819 — see information request blank, pgs. 2-3

**WHAT IS A ROTAMETER**

**HOW TO SELECT A ROTAMETER FOR YOUR SERVICE**

**ROTAMETERS**

Send for this booklet if you are interested in measuring the flow of any liquid, gas or other fluid. This new publication, featuring the Cochrane Series 100 Case Type Rotameter contains data of value that you can apply to your own problems. Write for a copy today. Use this coupon.

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Please send me a copy of your new Rotameter catalog Pub. R-100A

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Title \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_

When inquiring specify CP A1820 — see information request blank, pgs. 2-3

## INSTRUMENTS

### "X-Ray" Diffraction in Identifying, Comparing, Analyzing Materials

Compact, simplified unit mounts four cameras; tube can be changed in five minutes

**Uses** — For identification, research, production applications in connection with: alloys, asbestos, carbon, case hardening, cellulose, cement, cold-rolled steel, dry cells and batteries, greases, patent leather, lime, linseed and china wood oil, waxes, wood, rubber, paper, ceramic clays, inorganic fibers and many other materials.

**Features** — Aids in difficult analyses and in solving production and raw material problems. A practical medium for identification, comparison and control. For control purposes, a library of patterns can be established to serve as standards against which subsequent production can be checked for conformity, either in stages of processing or as finished products. Of recent interest to industry is the use of X-ray scattering to determine minute particle size, and particle distribution. The technique is of particular interest to the manufacturers of catalysts, synthetics, and certain plastics.

**Description** — This organization's recently developed X-ray diffraction unit has been designed to reduce the entire assembly to a simple and practical form. It embodies a suitable cabinet in which are the transformer and various automatic and safety controls. Conveniently located on the front panel are: main switch (circuit breaker), high voltage control switch, kilovoltage adjuster, X-ray tube control, X-ray tube millimeter and elapsed time meter (tube life and exposure). The cabinet supports four tracks on which four cameras can be mounted. This feature permits making four simultaneous exposures, con-

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**CLOSE CONTROL**  
For All Applications

10 Sizes from  
1000 Watt 12" Dia.  
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in variety of types  
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Stock or Special Units.

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**OHMITE**

RHEOSTATS • RESISTORS • TAP SWITCHES

When inquiring specify CP A1821 — see information request blank, pgs. 2-3

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TEMPERATURE and HUMIDITY

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When inquiring specify CP A1822 — see information request blank, pgs. 2-4

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Equipped to permit commercial tests practically reproducing actual field conditions, this modern Ross Laboratory is available to determine for you the best ways and means for solving industrial heating, curing and baking problems, after original development work has been completed. Consult us on this service.

Views showing some of our Laboratory equipment. Write for Brochure CP-1.

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DESIGNERS AND BUILDERS OF AIR PROCESSING SYSTEMS

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ROSS ENGINEERING OF CANADA, LIMITED — Dominion Square Building, MONTREAL, P. Q.  
LONDON — ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

When inquiring specify CP A1823 — see information request blank, pgs. 2-4



## INSTRUMENTS

saving time and tube life. The tracks surround a housing containing a four windowed, water-cooled, X-ray tube that is especially designed for diffraction work. The tube can be changed in five minutes. A time saving feature important where interchange of tubes is desired in investigation of different materials. Replacement of tube automatically reestablishes water and electrical connections. Diffraction cameras for various requirements are available. The powder camera is the most widely used because it is easy to adapt and relatively simple to manipulate. Other cameras are the focusing cameras, flat cameras, low angle cameras, etc. Literature on "X-Ray Diffraction" is available on request.

NORTH AMERICAN PHILLIPS CO., Dept. CP, 107 E. 42nd St., New York 17, N. Y.

When inquiring specify CP A1824 — see information request blank, pgs. 2-3

### Polarizer Determines Strain in Fabricating Plastic Materials

*Determines the amount of strain produced by mechanical manipulation of rigid, non-rigid plastic materials*

**Uses** — This apparatus is used to determine the amount of strain produced by fabrication or mechanical manipulation of transparent, rigid and non-rigid plastic materials and can also be used to identify transparent plastics.

**Description** — It consists of a source of illumination diffused through opal glass for uniformity. Above the light source are placed two polaroid sheets, sandwiched between clear glass, the upper glass section being adjustable through a distance of approximately 8 inches as it slides up and down on upright rods mounted on opposite sides of sheet metal base in which the lights are enclosed. The base is finished in black and is 15 inches square and 16 inches high. Polaroids and glass plate are rubber cushioned. Maximum sample size for observation is 11 x 11 inches. PRECISION SCIENTIFIC CO., Dept. CP, 1750 N. Springfield Ave., Chicago 47, Ill.

When inquiring specify CP A1825 — see information request blank, pgs. 2-3

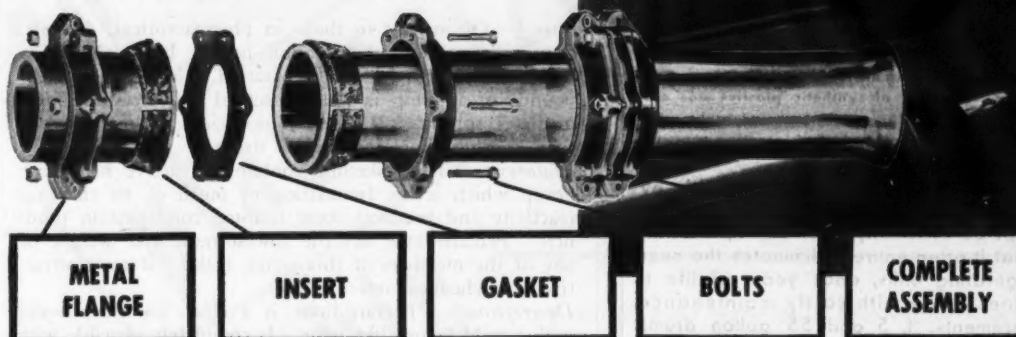
### Small Capacity Control Valves With Wide Range Percentage Flow Characteristics

Small capacity control valves with wide range of percentage flow characteristics are the subject of an illustrated bulletin of 18 pages that presents an informative discussion of small control valve design and performance. The valves with which this bulletin is concerned are a new series of small valves that provide exceptionally good flow characteristics. These are known as percentage piston control valves and are obtainable in five trim sizes, —  $\frac{3}{4}$ ",  $\frac{1}{2}$ ",  $\frac{3}{8}$ ",  $\frac{1}{4}$ " and  $\frac{1}{8}$ ". The outstanding feature is the manner in which these valves handle their flow range which is relatively the equivalent of sizes 6" through 1". Special design of plug and seat permit these excellent flow characteristics. All sizes have a  $\frac{1}{2}$  inch lift. Valves are available in bronze, cast iron, cast steel, etc. The several sections are devoted to detailed treatment of flow characteristics, design and construction and suggestions for valve selection, including dimension charts and data. There are several sectional views of a typical valve and a semi-logarithmic graph plotting the various percentage pistons. Copies of Bulletin 300 on request.

MASON-NEILAN REGULATOR CO., Dept. CP, 1190 Adams St., Boston 24, Mass.

When inquiring specify CP A1826 — see information request blank, pgs. 2-3

## It's easy to make a tight joint with PYREX PIPE



Making a tight joint with PYREX Pipe is easy. It's an A, B, C operation that any careful workman can perform. No special tools or training are required.

### HERE'S HOW IT'S DONE

1. Mount metal flanges on pipes before they are placed in hangers. Inserts can be handled easier if they are curled over sharp radius before insertion in flange.
2. Flanges should be pulled up on the inserts so that the metal flange face is nearly flush with the end surface of the insert.
3. Gaskets should be lined up with the inner surface of the pipe so that no part protrudes into the pipe to cause obstruction to flow. To avoid slippage, gaskets should be kept thoroughly dry during installation.

4. As the pipe lengths are put into place, tighten the flange bolts enough to bring the glass pipe ends snug against the gasket, but not enough to compress it.

5. When all pipes and fittings are connected and the line is complete, begin at fixed end and work to the opposite end tightening the flange bolts. Do this evenly and pull them up quite tightly. Use a 6" or 8" end-wrench if possible.

Once installed, PYREX Pipe brings to your processing operations many important advantages. Its transparency permits you to inspect product flow and condition at every stage of processing. Its resistance to thermal shock allows flushing of lines with steam or hot water for visible cleanliness. Its chemical stability virtually eliminates corrosion, contamination, scaling and pitting. It is rugged enough to meet plant operating conditions. For further information, write Industrial Sales Dept., CP-5

**CORNING GLASS WORKS**  
CORNING, NEW YORK



When inquiring specify CP A1827 . . . see information request blank, pgs. 2-3

## 25% MORE CAPACITY ... SAME REFRIGERATING UNIT



**INDUSTRIAL  
NoDrip**

By coating his tanks with NoDrip, a manufacturer of synthetic plastics was able to add 25% more jacketed tanks without increasing his refrigerating capacity.

A sure cure. Stops condensation drip by shutting out heat, cold, air, moisture; prevents corrosion and rust. So efficiently does NoDrip insulate and protect that it often entirely eliminates the need for new refrigerating units, adds years of life to equipment, does away with costly maintenance, reduces replacements. 1, 5 and 55 gallon drums. Order from your Supply House.

### EASY APPLICATION

Applied like plaster with brush, trowel or spray. Adheres to metal, cement, brick, wood.

NoDrip Handbook on Request

**J. W. MORTELL CO.**

Technical Coatings Since 1895

530 Burch St. Kenosha, Ill.

When inquiring specify CP A1828 — see information request blank, pgs. 2-3



## New Materials

### Reactive Diketone-Pharmaceutical Metal Refining Applications

**Pentanedione — 2, 4 (acetylacetone)  $\text{CH}_3\text{COCO}_2\text{COCO}_2$**   
is available in commercial quantities

**Uses** — Of interest to those in pharmaceutical, dyestuff, metal-refining, and photographic fields. It is valuable as a starting material for the preparation of a variety of compounds of interest as pharmaceutical and dyestuff intermediates, solvents, plasticizers, insecticides, resin stabilizers, corrosion inhibitors and "sulfa" drugs.

**Features** — This diketone contains an active methylene group which is the foundation of much of its chemical reactivity and produces some unusual condensation products. Pentanedione has the lowest molecular weight of any of the members of this series, making it most attractive as a chemical intermediate.

**Description** — Pentanedione is a clear, colorless liquid with a mild ketone-like odor. Is completely miscible with most organic solvents. Since it is a member of the "1,3 dione" class of organic compounds, it possesses the remarkably active central methylene group that distinguishes these materials. Pentanedione functions as a univalent radical to react with metal oxides or metal salts such as those of chromium, cobalt, copper, manganese, mercury, nickel

and zinc, forming quite stable, characteristically colored metal salts. Certain of these metal salts of pentanedione shows particular promise as addition agents for petroleum products. Metallurgists may find that the products of some of these pentanedione metal salts may prove useful as a means of separating or purifying metals that are difficult to refine by conventional methods. Pentanedione condenses readily with aniline to form a product that can be dehydrated to 4 — methyl quinaldine, which in turn can be used in the manufacture of important carbocyanine dyes. These dyes are widely employed as sensitizers in color photography. Dyestuffs similar to Hansa yellow are formed when pentanedione is condensed with aromatic diazo compounds. This diketone also condenses with quandinine to form the important "sulfa" drug intermediate 2 - amino-4, 6-dimethyl pyrimidine. Pentanedione 2, 4 is being produced in commercial quantities. In addition to pentanedione, development quantities of other interesting 2, 4, diketones possessing greater hydrocarbon solubility and lower water solubility than pentanedione may be supplied. Complete technical information on pentanedione 2,4, is available on request.

**CARBIDE AND CARBON CHEMICALS CORP.**, Dept. CP, 30 E. 42nd St., New York 17, N. Y.

When inquiring specify CP A1830 — see information request blank, pgs. 2-3

## Have you tried TETRAHYDROFURFURYL ALCOHOL for dissolving "insoluble" complex organics?

Many chemists have found that Tetrahydrofurfuryl Alcohol will dissolve those complex organic substances that are not touched by many other of the commonly used solvents. In the textile and dye fields, the use of Tetrahydrofurfuryl Alcohol is growing because of the ability of this chemical to dissolve many of the new organic dyes. It is also filling a specific need in lacquers and special coating compositions where solvent costs are not of primary consideration.

The dispersant qualities of this alcohol for chlorinated rubber, vinyl resin, nitrocellulose, shellac, benzyl cellulose, polyhydric alcohol, polybasic acid resin, rosin and estergum suggest it may provide the answer where a special solvent is indicated.

### OTHER USES OF

#### Tetrahydrofurfuryl Alcohol

While but recently made available in commercial quantities, the literature on Tetrahydrofurfuryl Alcohol indicates its versatility and usefulness in many processes and reactions.

**Wetting Agent:** It has been used alone or in mixtures with soap, trichloroethylene, or sulfonated lauryl alcohol as wetting, washing, and cleansing agents for

textiles, raw wool and tanned sheepskins.

**Plasticizers:** Tetrahydrofurfuryl Alcohol converts into esters and other derivatives easily, forming excellent plasticizers. The use of these plasticizers for conditioning cellulose derivative yarns is said to result in increased softness and pliability. This versatile chemical also reacts with terpinene maleic anhydride, maleic and phthalic anhydrides. Improvement of the wet strength of regenerated cellulose articles is effected with the addition of Tetrahydrofurfuryl Alcohol. Softening and elasticity are also reported as resulting from the use of Tetrahydrofurfuryl Alcohol with gelatin, casein and albumen compositions.

If you would like to try Tetrahydrofurfuryl Alcohol in your operations, you can count on the help of our Technical Staff in evaluating its performance.

## The Quaker Oats Company

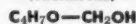
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FURFURAL • FURFURYL ALCOHOL • HYDROFURAMIDE • TETRAHYDROFURFURYL ALCOHOL

## Quaker

### TETRAHYDROFURFURYL ALCOHOL

(TECHNICAL)



Mobile liquid, water white to pale yellow in color.

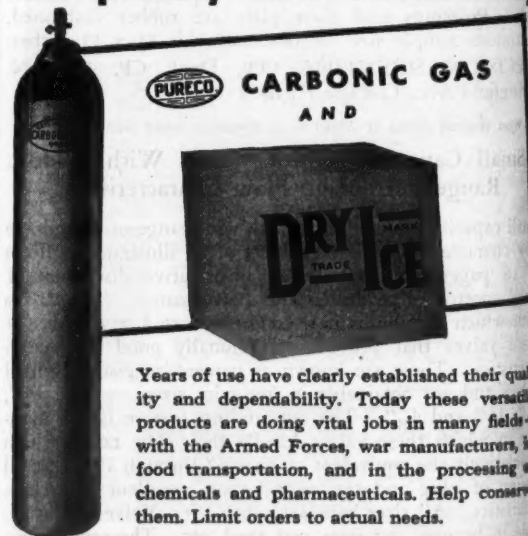
Molecular Weight	102.13
Boiling Range, °C (99%)	170 to 180
Specific Gravity (25/25°C)	1.052
Flash Point (open cup) °C	75
Refractive Index (25/D)	1.4502
Surface Tension (Dynes/cm)	36.5
Viscosity at 25°C (centipoises)	5.49

### SHIPPING INFORMATION

Standard Containers: 8, 40, 80, and 475 lb. Drums (net).  
Carload of drums (80) ..... 36,000 lbs.  
F.O.B. Waverly, New York, except less drum lots, F.O.B. Cedar Rapids, Iowa.

**FURFURAL** is a liquid aldehyde, minimum 99.5%  $\text{C}_4\text{H}_6\text{O}-\text{CHO}$ . It has proved highly efficient in the production of aviation lubricants, synthetic rubber, wood resins, phenolic resins, abrasives and grinding wheels, glyceride oil separations, tall oil processing, vitamin oil refining, photo-sensitive resins, fungicides, bactericides, and preservatives, and as a pharmaceutical intermediate, solvent for coatings, esters, gums, textile and shoe dyes, and cleaners.

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When inquiring specify CP A1829 ... see information request blank, pgs. 2-3

When inquiring specify CP A1831 — see information request blank, pgs. 2-3



## MATERIALS

### Colloidal Graphite Dispersions

An eight page folder concisely catalogs a complete line of colloidal graphite dispersions. Included in the selection are an important group hitherto not available. These dispersions are available in a choice of carriers such as distilled water, petroleum oil, castor oil, glycerine, diethylene glycol, naphtha, mineral spirits, alcohol, resin and wax. Nine colloidal dispersions are listed and meet such varying requirements as assembly lubricants, lubricating mechanism lacking continuous oil supply, as self-lubricating and anti-corrosive films. A concentration of 2% by weight of one of these is employed to fortify special rubber lubricant formulae and is useful as a low temperature lubricant. A number of semi-colloidal dispersions are also listed and indicated uses include impregnating fibre, duck, etc., to impart self-lubricity and electrical conductivity and as additive to coating material for wood or metal patterns of greensand molds. Copies are available on request.

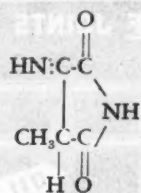
ACHESON COLLOIDS CORP., Dept. CP, Port Huron, Mich.

When inquiring specify CP A1832 — see information request blank, pgs. 2-3

### Ethyl-Alpha-Oxalpropionate

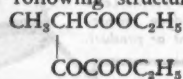
New intermediate — offers interesting example of versatility of sodium ethoxide as a condensing agent

Uses — Appears to have many unexplored uses as a starting material for organic synthesis. Some of these possibilities are suggested by the following reactions. (1) On distillation it loses carbon monoxide to give diethyl-methylmalonate. (2) On heating with ammonia it forms Alpha-methyl-beta-iminosuccinimide:



(3) On boiling with alcoholic KOH it breaks down to propionic acid, oxalic acid and alcohol. (4) On heating with ethyl iodide and sodium ethoxide it yields alpha-methyl-alpha-thyl-oxalpropionic ester. (5) On heating with dilute  $\text{H}_2\text{SO}_4$  it gives propionylformic acid (alpha-oxobutyric acid), alcohol and  $\text{CO}_2$ . (6) On hydrogenation it gives diethyl alpha-hydroxy-beta-methyl-succinate, which upon further hydrogenation forms 3-methyl, 1,2-butanediol, 2-methyl, 1,4, butanediol, and alcohols and water. (7) In Alcoholic solution it gives an intense red color with ferric chloride.

Description — Ethyl-alpha-oxalpropionate is prepared by condensing diethyl oxalate with ethyl propionate in the presence of sodium oxalacetate and methyl iodide. Alpha-oxalpropionate has the following physical characteristics: mol. wt. 202, sp. gr., 1.0977 @ 20°/20° C., refractive index 1.433 @ 20° C. boiling point 108-109 @ 5.5 mm. Hg abs. Color light yellow to colorless. Alpha-oxalpropionate has the following structural formula—



Limited quantities are available for research.

U. S. INDUSTRIAL CHEMICALS, INC., Dept. CP, 60 E. 42nd St., New York 17, N. Y.

When inquiring specify CP A1833 — see information request blank, pgs. 2-3

an excellent  
plasticizer  
now

Monsanto Ortho-Nitrodiphenyl has amazing versatility when used as a plasticizer.

It can be used alone or in conjunction with other plasticizers and is applicable to the entire range of synthetic resins from the cellulose esters and others through the vinyls and vinyl copolymers.

It is compatible with alkyds and some synthetic rubbers.

Why not look into the possibilities of Monsanto Ortho-Nitrodiphenyl? You may find it to be your solution to the problem caused by hard-to-get plasticizers. Complete technical data and samples will be sent promptly upon request. Please use the coupon below, contact the nearest Monsanto office or write: MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri. District Offices: New York, Chicago, Boston, Detroit, Charlotte, Birmingham, Los Angeles, San Francisco, Seattle, Montreal, Toronto.

mail coupon  
for sample  
and data



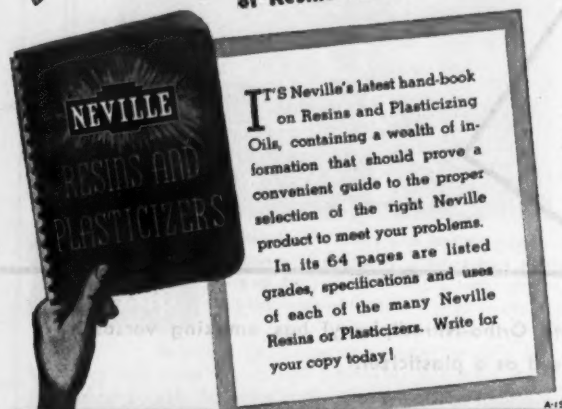
MONSANTO CHEMICAL COMPANY  
Dept. I-16, Organic Chemicals Division  
1700 South Second Street, St. Louis 4, Missouri

Please send, without cost or obligation, technical data and sample of Monsanto Ortho-Nitrodiphenyl.

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Street \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

When inquiring specify CP A1834 . . . see information request blank, pgs. 2-3

## Your Guide... TO THE NEVILLE LINE of Resins and Plasticizing Oils



IT'S Neville's latest hand-book on Resins and Plasticizing Oils, containing a wealth of information that should prove a convenient guide to the proper selection of the right Neville product to meet your problems.

In its 64 pages are listed grades, specifications and uses of each of the many Neville Resins or Plasticizers. Write for your copy today!

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PITTSBURGH - PA.

Chemicals for the Nation's War Program

BENZOL • TOLUOL • XYLOL • TOLAC • NEVSOL • CRUDE COAL-TAR SOLVENTS  
M-FLASH SOLVENTS • COUMARONE-INDENE RESINS • PHENOTHIAZINE • TAR PAINTS  
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RECLAIMING, PLASTICIZING, NEUTRAL, CREOSOTE, AND SHINGLE STAIN OILS

When inquiring specify CP A1835 — see information request blank, pgs. 2-3

In producing or handling  
CHEMICAL POWDERS and  
COAL TAR DERIVATIVES

USE

M-S-A

**FEND-O**

BARRIER SKIN PROTECTION

Wherever irritant powders are encountered in chemical processing and munitions manufacture, Fend-O barrier skin protection is indicated. A bland lotion, semi-water repelling on the skin, Fend-O dries quickly on application, is non-sticky, and does not roll with powder. At work's end it is easily removed with mild soap and warm water. Tetrayl, T.N.T., coal tar derivatives, wood preservatives, alcohols, acetone are typical irritants against which Fend-O affords protection—the complete list is presented in the informative Fend Brochure, free on request!



MINE SAFETY APPLIANCES CO.

BRADDOCK, THOMAS AND MEADE STREETS  
PITTSBURGH 8, PA.

When inquiring specify CP A1836 — see information request blank, pgs. 2-3

## MATERIALS

### Liquid, Solid, Powdered Driers For Paints, Varnishes, Inks

*Variety of concentrated driers offer wide selection  
to meet individual preferences*

**Uses** — This complete line of driers makes it possible to make a selection that is particularly suited to the specific requirements of various paints, varnishes, inks, etc. being formulated in accordance with manufacturing facilities and performance characteristics of the products.

**Description** — Naphthenate driers (Uversols) combine such characteristics as high metal content, uniformity and stability, ease of incorporation and solubility in solvents and vehicles. They are manufactured in liquid and solid forms, in single metals and in combination of metals. They can be used for most drier purposes. Liquids may be incorporated at any stage of formulation either in concentrated or diluted form and may be incorporated directly with hot driers. In solid form they are soluble in petroleum thinners, coal tar solvents, and terpentine, and insoluble in acetone and alcohol. Linoresinates are widely used as driers, particularly as replacements for Naphthenate (Uversols) driers. No rosin as such is present but they give a positive test (Liebermann-Storch) for rosin. They are nearly as soluble as the Naphthenate driers. They are available as liquids of high metal content and as solids in single metals or combinations of metals in various ratios. This maker's paste driers are available in a range of viscosities and metal contents and the cobalt pastes are available in several metallic strengths and controlled consist-

## PREVENT TANK RUSTING *Electrically*

Modern, service-proved Rusta Restor method... using safe, low voltages... gives lasting protection... for the cost of just one good paint job.

Like hundreds of others from coast to coast, your tanks too can get lasting protection against rusting with Rusta Restor. Not a "magic" but the thoroughly proven cathodic (i.e. electrical) process, Rusta Restor maintains the tank in an "electro-negative" or "neutralized" state that prevents rusting. Modest in first cost... Uses the current of only one light bulb. Send for full details today.

### RUSTA RESTOR

THE PROVEN CATHODIC (I. E. ELECTRICAL) RUST PREVENTIVE  
A DIVISION OF

THE JOHNSTON AND JENNINGS COMPANY

855 ADDISON ROAD • • • CLEVELAND 14, OHIO

OSCO VAPOR CONSERVATION AND FIRE PREVENTION EQUIPMENT FOR VOLATILE  
LIQUID STORAGE TANKS STOWE STOKERS HAMMERED FORGINGS

When inquiring specify CP A1837 — see information request blank, pgs. 2-3

## Giving Longer, more Efficient Service ALUNDUM WARE



Its refractoriness permits ALUNDUM Laboratory Ware to be washed and ignited to constant weight after a filtration, allowing the devices (dishes, cones, crucibles, discs, thimbles) to be used repeatedly. ALUNDUM ( $Al_2O_3$ ) Ware is chemically inert and available in high, medium and lower permeabilities.

NORTON COMPANY, Worcester 6, Mass.

## Norton Laboratory Ware

When inquiring specify CP A1838 — see information request blank, pgs. 2-3

### LEAKPROOF JOINTS

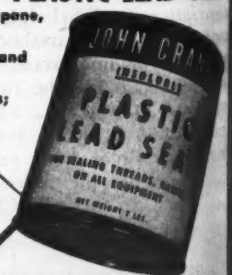


With **JOHN CRANE**

### Insoluble PLASTIC LEAD SEAL

- Insoluble in water, gasoline, propane,  $CO_2$ , etc. Won't wash out.
- Seals quickly; fills clearances and imperfections.
- Stops galling, rust. Never hardens; joints easily taken apart later.
- Ready for use, in 1, 5, 7-lb. cans.

Order a trial can of Plastic Lead Seal—watch it reduce maintenance in your plant or product.



CRANE PACKING COMPANY 1821 CUYLER AVE. - CHICAGO 10, ILL.

When inquiring specify CP A1839 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## MATERIALS

of particular interest in ink formulations. Other resins include Resinate, Linoleates, Soyates, prepared from soybean oil and similar in properties to the solid linoleates but slightly less soluble. Drier booklet, "Helpful Data on Driers," contains tabulated data on typical properties of the aforementioned driers and also information on drying Salts, Sterates, Laurates. Data includes metal content, specific gravities, bulking values, pounds per gallon, metal ratios and uses.

MARSHAW CHEMICAL CO., Dept. CP, 1945 E. 79th St., Cleveland 6, Ohio.

When inquiring specify CP A1840 — see information request blank, pgs. 2-3

### Coatings for Metal, Brick, Cement, Wood, and Creosoted Surfaces

Protective coatings for metal, brick, cement and wood surfaces in twenty-page illustrated booklet. The wide selection offered includes pipe enamel and primer for oil, gas, gasoline, water transportation lines, which is also suitable for use on steel water and storage tanks as a lining or coating. This is applied at temperatures between 450° F. and 470° F. Made in two grades — one for use where extremely hot temperatures prevail. Several cold applications for use on tanks exposed to atmosphere; or placed underground or under water; or subject to erosion and either fresh or salt water. Another coating is made especially for such applications on combustion engines, pickling houses and sewage works and provides a durable coating for steel, concrete and other surfaces. A paint for use on creosoted lumber, poles, wood blocks and pilings is available in five attractive colors. The booklet's many illustrations show many actual applications on these materials right on the job. Information as to properties of the various coatings, means of application, coverage and container sizes is most complete. Copies are available on request.

REILLY TAR & CHEMICAL CORP., Dept. CP, Merchant's Bank Bldg., Indianapolis 4, Ind.

When inquiring specify CP A1841 — see information request blank, pgs. 2-3

### Organic Acid Pickling Inhibitor

*In powdered form; completely soluble in either muriatic or sulfuric baths*

**Uses** — Organic acid pickling inhibitor is highly stable and completely soluble in pickling baths of either muriatic or sulfuric acid; contains 100% active ingredients and is highly effective at such low concentrations as 0.02% to 0.10%, by weight of the pickling bath. This material effects economies in both acid and metal, while minimum quantities of inhibitor are required. It can be used in acid pickle baths prior to electroplating, galvanizing and annealing since it is free-rinsing and minimizes hydrogen absorption.

**Description** — Available in commercial quantities for bulk pickling operations. It is designed as Pennsalt PM-40. Due to the high base metal protection the acid is consumed principally in scale and rust removal with the result that the useful life of the bath is prolonged. Packaged in drums of 25, 100, and 200 pounds, it can be secured through the Special Chemicals Div. of the company.

PENNSYLVANIA SALT MFG. CO., Dept. CP, 1000 Widener Bldg., Philadelphia, Pa.

When inquiring specify CP A1842 — see information request blank, pgs. 2-3

## CATHEDRAL OF POWER

\* Compressor room, North Plant, Wyandotte Chemicals Corporation, Wyandotte, Michigan. Heart of the processing operations, source of power, gas and air compression, vacuum, and pumping requirements of the North Plant, its shops and salt wells. Here originates power used to transform salt, limestone and coal into alkalies and chemicals.

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ONE OF THE WORLD'S GREAT PRODUCERS OF CHEMICALS

SODA ASH  
CAUSTIC SODA  
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CALCIUM CHLORIDE  
CHLORINE  
HYDROGEN  
SODIUM ZINCATES

AROMATIC INTERMEDIATES  
DRY ICE  
Other Organic and  
Inorganic Chemicals

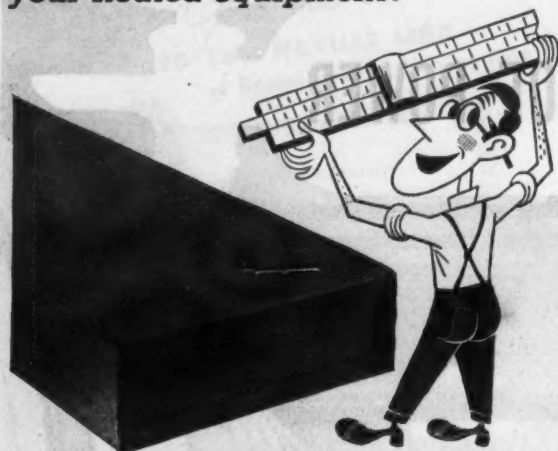
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MICHIGAN ALKALI DIVISION • WYANDOTTE, MICHIGAN



VITAL TO VICTORY TODAY—READY TO WORK FOR A GREATER TOMORROW

When inquiring specify CP A1843 . . . see information request blank, pgs. 2-3

**An Efficiency Expert for  
your heated equipment!**



## EAGLE SUPERTEMP BLOCK INSULATION

As a low-cost, all-purpose block insulation, Eagle Supertemp prevents heat loss and steps up the efficiency of boilers, heat treating furnaces, turbines, hot air ducts, hot water tanks, ovens, and other heated equipment.

Because it contains thousands of dead air cells in its Eagle Mineral Wool, Supertemp Block has extremely low thermal conductivity. The fact that it is chemically and physically stable, and won't break down under recommended uses, makes this unique insulation permanently efficient. It withstands a full range of temperatures up to 1700° F.

Eagle Supertemp Block has ample structural strength to withstand all normal handling and usage. It can be installed quickly, cuts easily with knife or saw, and fits snugly over minor irregularities, such as rivet heads. It is virtually fireproof, and highly water-repellent. Contains nothing to cause rust or corrosion on metal equipment.

To speed application of Eagle Supertemp Block, we suggest Eagle Insulstic, a strong, paste-like adhesive that holds insulation in place until a permanent support can be added.

To protect Eagle Supertemp Block we recommend Eagle Insulseal, a tough, weatherproof coating that guards insulation against damage.

**FREE MANUAL!** Gives case examples of how industrial insulation effects large fuel savings. Includes Heat Loss Estimate Sheet for your use. Write for your copy.

★ Back the boys at the front with MORE War Bonds! ★

### EAGLE-PICHER INSULATIONS High and Low Temperature

Made by THE EAGLE-PICHER LEAD COMPANY, Cincinnati (1), Ohio  
Eagle Super "66" Plastic Insulation • Eagle L-T and M-2 Felt • Eagle Supertemp Block • Eagle Blankets • Eagle Pipe Covering • Eagle Insulseal • Eagle Loose Wool Eagle Insulstic • Eagle Swatchek • Eagle Drycate



When Inquiring specify CP A1844 — see information request blank, pgs. 2-3

## MATERIALS

### Process Makes Sodium Methylate Commercially Available

*Eliminates preparing in solution as required; contains a minimum of 95% sodium methylate, not over 2% organic alkalies or 3% methanol*

**Uses** — Recently developed process makes sodium methylate commercially available for more convenient use as a versatile reagent for organic synthesis. The compounds of commercial importance which may be made by methods involving the use of sodium methylate include pharmaceuticals, perfumes, metallic soaps, dyes, and organic intermediates.

**Features** — Heretofore, users of this product have had to prepare it in solution as needed.

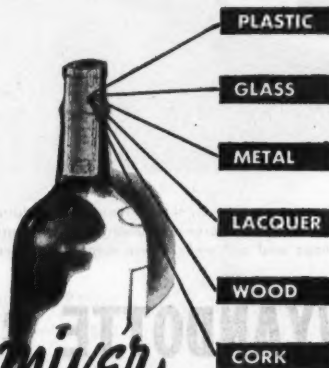
**Description** — The process developed for its manufacture utilizes sodium amalgam produced by the Castner electrolytic cell which this organization has used for many years to produce caustic soda and chlorine. The new product is a dry white powder containing "a minimum of 95% of sodium methylate, not over 2% of inorganic alkalies (sodium hydroxide and sodium carbonate) and not over 3% of methanol." It is packaged in air-tight containers and is said to be stable as long as it is not exposed to the air.

THE MATHIESON ALKALI WORKS (Inc.), Dept. CP,  
60 E. 42nd St., New York 17, N. Y.

When Inquiring specify CP A1845 — see information request blank, pgs. 2-3

When an  
adhesive  
must be

*a good mixer*



Take any combination of surfaces. Vary them. Vary the bottle shape, glass, condition. Then, adhere a revenue stamp to all with a single waterproof adhesive—a very versatile adhesive—a good mixer!

National's strip-stamp adhesive is doing this job. Yet it's only one of National's large family of resin adhesives. Others are bonding everything from lampshades to luggage, bomb rings to bandage boxes—successfully.

Whatever your specific combination of conditions may be—the surfaces, application methods, field considerations—National, as a pioneer in industrial as well as laboratory research, can simplify, speed-up your regular work and meet new problems. Your inquiry is invited NOW!—270 Madison Avenue, New York 16 and principal cities.



EVERY TYPE OF ADHESIVE FOR EVERY TYPE OF ADHESION

When Inquiring specify CP A1846 — see information request blank, pgs. 2-3

## FAST, EFFECTIVE RUST REMOVAL

### Surface Chemistry



Turco W.O. #1, through Surface Chemistry, minimizes pre-cleaning and makes neutralizing treatment unnecessary. One continuous operation reconditions metals, passivates surface, prepares it for durable rustproofing or painting. Contains no abrasives, requires neither scouring nor sanding. A short dip in Turco W.O. #1, or a brief wiping makes rust disappear. The wetting properties of Turco W.O. #1 enable it to penetrate screw threads, grooves and crevices which could not be reached any other way. W.O. #1 wets out and removes minor soil deposits. It is not hindered by presence of light oil

film. Unless work is heavily soiled, pre-cleaning is unnecessary. W.O. #1 deposits an absorbent phosphate film on the surface of the work which bonds tenaciously with primer, paint and rust-proofing compounds. A W.O. #1 treated surface is therefore not only clean and free of rust, but ready immediately for final processing. One trial will prove it. Write for full particulars about Turco W.O. #1, another Turco development in Surface Chemistry.



INDUSTRIAL CHEMICAL COMPOUNDS  
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Los Angeles 1 • Offices and Branches: 1100 Broadway St., New York 17, N. Y.  
110 W. 40th St., Chicago 5 • Offices and Warehouses: All Principal Cities

When Inquiring specify CP A1847 — see information request blank, pgs. 2-3

## POPS when it SHOULD pop!

Accurate, dependable popping and tight closing are built into this FARRIS Pop Valve No. 1800. Precision machining of the same calibre that has made all FARRIS Safety and Relief Valves so reliable. Light-weight, but sturdy construction for grueling service and long life. Economically priced. Specify this FARRIS pop valve and you'll soon see why engineers are demanding FARRIS valves for all kinds of safety and relief jobs. We build a complete line to suit most jobs.

Write today for our  
Specifications Bulletin

FARRIS ENGINEERING CO.

350 Commercial Ave., Paltades Park, N. J.



When Inquiring specify CP A1848 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## MATERIALS

### Data on Fatty Acid Products & Uses Based On Physical Properties

Twenty-eight page catalog presents an unusually comprehensive treatment of a great number of fatty acid products. Before discussing the fatty acid products produced by this company initial pages are devoted to description of their chemically pure counterparts. Olefinic types, Oleic Acid, Stearic Acid, Palmitic Acid are each dealt with. The more commonly known method of separating these animal fats by splitting is considered and it is pointed out that the products of this process are a so-called stearic acid which is rather a hard solid, and a liquid fraction oleic acid. This solid fraction actually consists of a crystalline mixture of two solid fatty acids, palmitic and stearic, containing approximately 55% of the former and 45% of the latter. The relative proportion of each is essentially that found in the original fat. It is pointed out that by this company's relatively new process these fatty acids are refined and separated to produce all the standard commercial grades of solid fatty acids, as well as several unique grades in which the ratio between the amount of stearic ( $C_{18}$ ) acid and that of palmitic ( $C_{16}$ ) acid is varied to yield solid fatty acids with special characteristics and properties. In general the end products are oleic acids, with titres below  $10^{\circ}\text{C}$  and solid fatty acids with titres above  $121^{\circ}\text{F}$ . and which contain both stearic and palmitic acids in varying proportions. Several pages are devoted to information of the uses of compounds of fatty acids in water soluble soaps, emulsions, emulsifying agents, greases, paints, etc. A section is devoted to Aliphatic Dibasic and Low-Molecular Weight Fatty Acids. Numerous tables and charts are provided for easy reference to essential technical data and an appendix summarizing the important types and sources of waxes is also of interest as is a glossary of various terms.

MERY INDUSTRIES, INC., Dept. CP, Cincinnati 2, Ohio

When inquiring specify CP A1849 — see information request blank, pgs. 2-3

### Reagents for Gas Analysis

Bulletin lists and enumerates properties of reagents for gas analysis. The first of these is "Cosorbent" available in two forms: (1) Dry powder, prepared for use by mixing with sulfuric acid; (2) liquid, bottled, ready for use. In either form it is fast, accurate, requires few passes, absorbs all carbon monoxide. Another is Lusorbent for luminants — ethylene, propylene, etc. Compared with burning sulfuric acid requires only half the number of passes. Oxsorbent for oxygen. This rinses cleanly in pipette capillary; slightly acid and easy on stopcocks. Bulletin 453.

BURRELL TECHNICAL SUPPLY CO., Dept. CP, 1936 5th Ave., Pittsburgh 19, Pa.

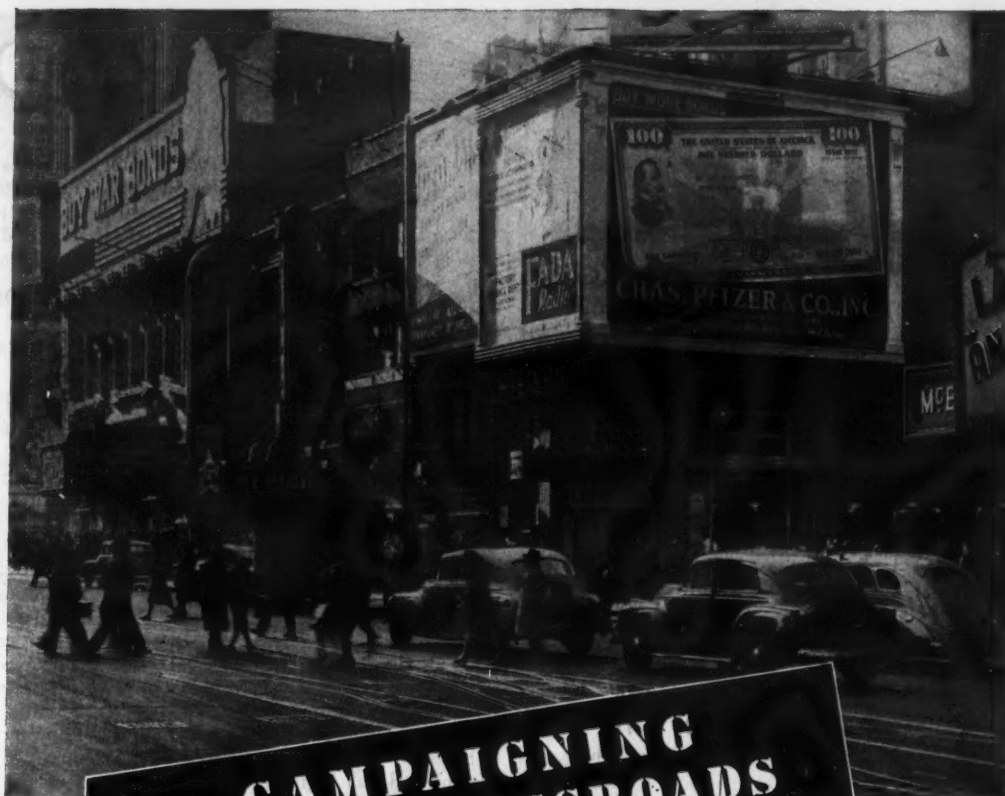
When inquiring specify CP A1850 — see information request blank, pgs. 2-3

### Bulletins On Yeast Adenylic Acids; Adenine, Adenine Sulphate, Adenine Hydrochloride

A bulletin has recently been made available on Yeast Adenylic Acid as prepared by organization referred to here and describes the characteristics and therapeutic properties of this purine compound in detail. Included is a table of references on adenylic literature. This identified as Bulletin 106. Another bulletin Number 106a describes composition, properties and uses of adenine, adenine sulphate, and adenine hydrochloride.

SCHWARZ LABORATORIES, INC., Dept. CP, 202 E. 44th St., New York 17, N. Y.

When inquiring specify CP A1851 — see information request blank, pgs. 2-3




## CAMPAIGNING AT THE CROSSROADS

At the "Crossroads of the World", above the throng and bustle of New York's Times Square, you'll see this outdoor sign with its war bond two stories high. Here is part of a sustained campaign to back up the men who are fighting for us in the earth's far places. It is a campaign in which Chas. Pfizer & Co. is proud to help.

At other crossroads thousands of miles west of Manhattan, sure-footed litter-bearers pass warily along narrow jungle trails. On other fronts far to the east, mud-bogged lanes lead from battalion aid station to clearing station and field hospital. In places like these, Penicillin is aiding the medical personnel of our armed forces in their service to the wounded in land, sea and air combat.

As the world's leading manufacturer of penicillin, Chas. Pfizer & Co. welcomes this opportunity to be of help. This is campaigning, too. This is backing our men with drugs as well as dollars.

Producing penicillin is a solemn responsibility as well as a deeply-felt privilege. For this almost unbelievable drug is often most effective at the most important crossroad of all — the crisis where man's very life hangs in the balance.

THE WORLD'S LARGEST  
  
 PRODUCER OF PENICILLIN

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MANUFACTURING CHEMISTS • ESTABLISHED 1849  
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 CHEMICALS FOR THOSE WHO SERVE MAN'S WELL-BEING



### BULK STORAGE FOR HANDLING OF MATERIALS THE NEFF & FRY WAY

Installations for food and chemical plants have been approved by the government and many are already in use—others are being erected.

Neff & Fry bins will store any bulk material that will flow—coke, coal, lime, cement, ores, grain—even water. They can be piped for heating. Of either Super-concrete stave or monolithic construction in any practical size and conveyor equipment. Quickly erected by professional crews. Guaranteed.

More than 1000 are in service throughout the nation in all industries. Get an illustrated catalogue and determine your needs now. Then get our cost estimate.

**THE  
NEFF & FRY CO.**  
Camden, Ohio

When inquiring specify CP A1852 — see information request blank, pgs. 2-3

## ★ IDEAS ★

Industrial ingenuity constantly hatches new ideas, many of which can be applied to similar problems in other plants. The Editors have selected these ideas and developments because of their interest and possible application in specific plant problems. If you would like more information on any of these, write direct to the manufacturers.

### Acid-Resistant Plastic Clamps

*Non-conductors of electricity; useful in such process operations as electro-plating*



LIGHT WEIGHT — RUGGED

An acid, moisture, alkali resistant plastic clamp offers particular advantages in laboratories, electroplating operations and similar uses where such improvements are required. The clamp consists of two parts, a stator or stationary base and a clamping piece adjustable by means of a threaded screw turning knob. The clamp is light in weight and has high impact strength. (Commercial Plastics Co., 201 N. Wells St., Chicago, Ill.)

### Advantages of Compressed Air Agitation of Liquids

*Nozzle or perforated pipe and air supply are that is required*

Applications of compressed air are providing positive labor saving methods of processing, handling and providing power for plant operations. Agitation of liquids is a practical example. An advantage of air agitation is that no foreign substances can be introduced such as oil or grease. In some processes the oxidizing effect of the air may be turned to direct account. Agitation by means of compressed air may be accomplished in many ways as by inserting a jet down into the midst of the material or by arranging a set of jets around the edge of the tank to force the air into the bottom of the material. If gentle agitation is desired this can be accomplished by laying one or more perforated pipes at the bottom of the tank and connecting them with a source of air. It is desirable to have the perforations face downward to assist in spreading the rising bubbles of air. The

Because  
They Resist  
**HCl**  
and  
**AlCl<sub>3</sub>**



HASTELLOY Alloy lining of a large reaction vessel

**HASTELLOY Alloys are used in  
Aviation Gasoline Isomerization Plants**

#### HASTELLOY ALLOYS Offer All These Advantages:

1. Resistance to hydrochloric acid, cold or hot, dilute or concentrated.
2. Resistance to sulfuric acid, cold or hot, dilute or concentrated.
3. Resistance to oxidizing agents such as ferric chloride and wet chlorine.
4. Resistance to abrasion and wear.
5. High strength and toughness.
6. Variety of forms—castings, welding rod, mill forms\*, or fabricated equipment.

\*Not in HASTELLOY Alloy D

ISOMERIZATION of light petroleum fractions with an aluminum chloride catalyst is an important part of the aviation gasoline program. But the highly corrosive hydrochloric acid and chlorides formed in the process attack most metals rapidly, so that the life of vessels, piping, pumps, and valves is short.

HASTELLOY Nickel-Base alloys are the only materials that have proven satisfactory in this extremely corrosive service. Large reaction vessels are lined with HASTELLOY sheet; valves, pump parts, and piping are made of HASTELLOY alloys.

HASTELLOY Alloys are available in many forms and are fabricated into a wide variety of chemical processing equipment. From the whole range of alloys produced by Haynes Stellite Company, our engineers can help you select the right one for the job, whether the problem is corrosion, heat, wear, or abrasion. Write for further information.

#### Haynes Stellite Company

Unit of Union Carbide and Carbon Corporation



General Office and Works, Kokomo, Indiana  
CHICAGO—CLEVELAND—DETROIT—HOUSTON  
LOS ANGELES—NEW YORK—SAN FRANCISCO—TULSA

### THE EASY WAY TO GRIND SMALL OR VARIED BATCHES

Is to place jars, bottles or other cylindrical containers on the Abbe Jar Rolling Machine and the machine does all the rest. No clamping or locking containers in frames; no adjustments. Any combination of sizes can be run simultaneously on these rubber covered rollers.

These machines are made for one, two or three parallel rows of jars, in single, double or multiple tiers, for jars from 1 qt. to 6.6 gallons. For easy, low cost pulverizing, grinding or mixing of small batches of same or different materials — investigate this Abbe laboratory or production unit. Bulletin No. 58.

**ABBÉ  
JAR ROLLING  
MACHINES**

**ABBÉ ENGINEERING CO.**

Pulverizers • Grinding Mills • Mixers • Sifters

46 Church Street

New York 7, N. Y.

When inquiring specify CP A1854 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

**HASTELLOY**  
TRADE-MARK

The word "Hastelloy" is a registered trade-mark of Haynes Stellite Company.

HIGH-STRENGTH NICKEL-BASE ALLOYS FOR CORROSION RESISTANCE

When inquiring specify CP A1853 . . . see information request blank, pgs. 2-3



## IDEAS

perforations near the inlet should be smaller or spaced further apart than those further away so that agitation will be uniform throughout the tank. Pressure required is sum of three factors, (1) head of liquid over orifices; (2) friction in the air pipes; (3) pressure required to force air through the orifices. Agitation increases more rapidly than the rate of the flow of air. The degree of agitation depends on the quantity of air flowing and upon velocity with which it leaves holes. Better agitation is obtained with deep tanks than with shallow tanks where the same quantity of air is used. For ordinary service the following quantities of air per sq. ft. are suitable when the depth of liquid is about 36 in. Moderate agitation 1.3 cu. ft. air per min., complete agitation 2.6 cu. ft. air per min., violent agitation 6.2 cu. ft. air per min. Agitation of heat treating oil bath is a typical application. Another compressed air application that simplifies a troublesome job is the forcing of drum heads into position smoothly and snugly by means of an air cylinder and a jig. (Data-Ingersoll-Rand, Philadelphia, N. J.)

### Combination Filter and Dryer

*Easily installed on any part of refrigeration systems; removes impurities in lines*

A recently developed device combining both a dryer and a filter in one unit is described as easy to install on any part of the refrigeration system and is most effective when connected ahead of the expansion valve. By combining a dryer that absorbs 12-16 times its own weight in water and a filter as effective as a 900 mesh strainer it removes gummy deposits, scale, dirt, solder and other particles and absorbs moisture and acids in the system. This filter-drier has been introduced under the name of "Trap-Dri." (Automatic Products Co., Milwaukee, Wis.)

### Cleated Guard Saves Aprons.

*Offers protection on jobs that cause unduly fast wear; fits comfortably around waist*



GUARD protects apron

half-round hardwood cleats, which extend about half way around the waist. The guard is worn outside and "takes" the punishment that would otherwise quickly wear out the apron. (E. D. Bullard Co., 275 8th St., San Francisco, Cal.)

## BROWN FINTUBE SECTIONAL EXCHANGERS



*Designed*

**for Efficient Trouble-Free Operation**

Service-proved, and ideally suited for a wide variety of duty and capacity requirements, Brown Fintube Sectional Heat Exchangers offer users many exclusive features that insure a maximum of long, efficient, satisfactory performance,— including:

- 1 Flanged construction throughout,— eliminating screw fittings and screw unions,— and avoiding torsional strains on any member.
- 2 Steel sealing rings that provide the tight closures needed for high temperatures and high pressures.
- 3 Gasketed seals, eliminating ground joints, and all maintenance troubles common to ground joint construction.

- 4 Gaskets are renewable, fully retained, and joints may be inspected easily before sealing.
- 5 Seals may be made or broken with a small standard wrench,— from the front — permitting close, side by side installation in minimum space.
- 6 This new flanged construction permits interior of fintube to be inspected and cleaned without disturbing shell side seal.
- 7 Sturdy rugged design, employing forged steel flanges with stud bolting. All joints have been tested to several times normal operating pressures.

Investigate Brown Fintube Exchangers for every capacity and duty requirement. Prices, recommendations, and fully descriptive literature sent promptly.

**THE BROWN FINTUBE CO.**

119 FILBERT STREET • ELYRIA, OHIO

MANUFACTURERS OF INTEGRALLY FORGED FINTUBES AND FINTUBE HEAT EXCHANGERS

When inquiring specify CP A1855 . . . see information request blank, pgs. 2-3

# OLIVITE <sup>Acid</sup> Handling PUMPS

as ordered by one  
Process Plant



*When  
bought in  
"quantity lots" the product  
must be good*

In all modesty, we say the Olivite Acid-Handling Pump is good. It's durable, exceptionally durable both chemically and mechanically. It's efficient, too. The buyer does not have to sacrifice one value for the other. Nor is the Olivite narrowly limited in its application. It can handle practically any acid, except strong nitric, and many chemicals, hot as well as cold. Among the solutions being handled are:

## ACIDS

Acetic, citric, hydrochloric, phosphorous, sulphurous, sulphuric

## CHLORIDES

Ammonia, zinc, copper, iron, nicotine

## OTHER CHEMICALS

Alum, litho red, chlorinated brine, rayon rinsing solutions

We make three sizes of Olivite Pumps — 1 1/4, 2 and 4 inch, each with a direct or V-belt drive. Contact materials are OLIVITE, a rubber base material or OLIVEX, a tough resin plastic. Both materials are extremely durable. And the floating stuffing box is effective in sealing in the solutions handled.

Yes, the Olivite is an outstanding acid-handling pump. Why not give it a try in your plant? Send for Bulletin 308.

**OLIVER  
UNITED FILTERS  
INC.**

New York 18, N. Y.  
33 West 42nd Street  
San Francisco 11  
California



Chicago 1, Ill.  
221 N. LaSalle Street  
Western Sales Division  
Oakland 1, Calif.  
2900 Glascock Street

Canada: Sales & Manufacturing Representative  
E. Long Limited — Orillia, Canada

Factories: Oakland, Calif. — Hazleton, Pa. — Orillia, Canada — Melbourne, Australia

5-0UF-2

When inquiring specify CP A1856 — see information request blank, pgs. 2-3

## IDEAS

### Wirebound Box For Bottled Acids

*One box accommodates 32 of any of four 1 lb. bottle  
types; boxes also made for 5 Pt. size*



Placing cushion and separator unit  
in box

16" by 9 3/8", and which is designed of relatively thin wood, stapled and bound together by steel wire, weighs only 19 1/4 pounds, according to the report, representing a savings of 16 3/4 pounds over the nailed box used for comparison in the tests. Cushion and separator units are also made of thin wood.

The four-purpose design of the wirebound box was also found to be an improvement over the nailed boxes, which had to come in four different sizes to accommodate each of the four standard one-pound acid bottles.

Besides saving shipping cost by reducing weight, and adding to convenience value by making one standard form for four sizes of bottles, the wirebound box also reflects a saving in cost of manufacturing, and in cost of setting up,

A container that can carry 32 one-pound bottles of acid in any of the four sizes of bottles in general use has been perfected by the wirebound box industry. The box, which measures, in inside dimensions, 32" x



### THIS NEW AJAX COUPLING CATALOG *just off the presses!*

Every man who designs, builds, sells, operates, or maintains direct-connected machinery is invited to get a personal copy of this new catalog covering Ajax Flexible Couplings.

It gives latest working data on all types including Standard, Mill Motor (taper bore), Shear Pin, Bolt-on, Brake Drum and Detachable Hub Couplings.

Phone your nearest Ajax Flexible Coupling representative or write direct to

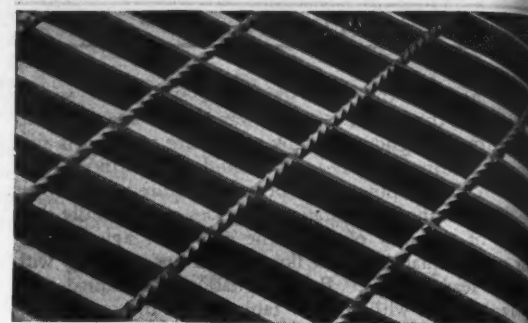
Patents Make Jobs

**AJAX FLEXIBLE COUPLING CO. INC.**

Incorporated 1920

WESTFIELD, N. Y.

When inquiring specify CP A1857 — see information request blank, pgs. 2-3



## ONE PIECE

...ELECTROFORGED STEEL CONSTRUCTION

- ★ Easy to maintain—paint reaches entire surface.
- ★ Open to maximum area of light and air.
- ★ Self-cleaning—no sharp corners to clog with dirt.
- ★ Economical and easy to install.

**BLAW-KNOX DIVISION of Blaw-Knox Company**  
2076 FARMERS BANK BLDG. • PITTSBURGH, PA.  
NEW YORK CHICAGO PHILADELPHIA BIRMINGHAM WASHINGTON

## BLAW-KNOX GRATING

When inquiring specify CP A1858 — see information request blank, pgs. 2-3



*"Armored Protection"*  
**is VITAL!**

That's true of your plant equipment, too—especially where steel is unduly exposed to corrosion.

Ingaclad Stainless-Clad Steel—product of the Ingersoll Steel Division of Borg-Warner Corporation—is mild steel "armored" with a ply of stainless steel. The two metals are so perfectly bonded into a single sheet or plate that only by looking at the edge or back of the metal can you detect that it is not solid stainless.

In operation it gives real stainless service on the side that is used, yet costs much less than the solid metal. By specifying Ingaclad Stainless-Clad Steel when you add new or rehabilitate old equipment you will effectively and economically armor your plant against corrosion.

We also produce Ingersoll Solid Stainless and Heat-Resisting Steel.

**INGERSOLL STEEL & DISC DIVISION**  
BORG-WARNER CORPORATION

310 South Michigan Avenue • Chicago 4, Illinois  
Plants: Chicago, Ill.; New Castle, Ind.; Kalamazoo, Mich.

When inquiring specify CP A1859 — see information request blank, pgs. 2-3



## IDEAS

as much as less wood is used, and boxes are delivered to pharmaceutical plants approximately two-thirds assembled although in the easily packed form of flat wooden shooks stacked on top of each other to save space.

Other boxes for acids described in the report include a wirebound box with wooden partitions for carrying ten 5-pint bottles of acid, which has a tare weight of 19 pounds and represents a saving of 9 pounds in weight; and a wirebound box to carry ten 5-pint screw cap bottles of acid. (Package Research Laboratory, Rockaway, N. J.)

## Unique Adjustable Anode Rod For Mass Production Plating Tanks

*Permits faster plating of irregularly shaped parts; anodes easily moved as required; not necessary to disconnect rod from source of power*



INSULATED HANDLE MOVES ANODE ROD

An adjustable anode rod makes it possible to quickly and conveniently move the anodes to the most advantageous position in relation to the work being plated for faster handling of irregularly shaped parts and adjustment to accommodate several types of work without electrically disconnecting the anodes from the source of power.

Designated for elongated tanks, the installation consists of brackets welded, bolted or riveted to the walls of the tank to which steel plates or arms insulated on either side with phenol fibre are pivotally attached. At the out end of these plates or arms are swivel fittings on which are mounted annular clamps containing insulators which surround and support the anode rod. The insulators are formed in two halves so that they may be easily installed and clamped in place around the rod. Anode baskets containing chunks or balls of the metal to be deposited are hooked over and supported by the rod. Current is supplied through a flexible cable attached to one end of the rod, while an insulated handle is provided at the other end to permit the operator to adjust the rod as desired. The rod will support several hundred pounds of anode material. In use, the operator lowers the work into the tank, and then by means of the insulated handle, moves the anode rod to place the anodes in the most desirable position for the parts being plated. When the plating is completed the rods are moved apart, the plated parts removed, new ones placed in the tank and the adjustment process repeated. It makes little difference whether one batch is similar to another. The whole adjustment process requires only seconds instead of long period required with other mounting methods. At no time during the operation is it necessary to disconnect the rod from the source of power. Lifting the anode material by the operator is eliminated. A more even disposition and finer texture of the plating material is provided and current required is reduced. (Glenn L. Martin Co., Baltimore, Md.)

## HE KNOWS WHAT'S RIGHT IN POWER DRIVES



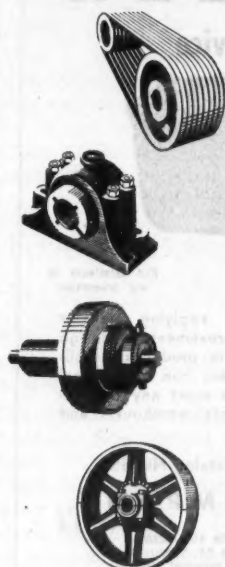
## He Is The Dodge Transmissioneer

He's a specialist in putting power to work, graduate of a factory course. That insignia on his lapel means he has proved his qualifications to prescribe the most efficient power drive to meet your needs. He can show you new and better ways to put all your power into the job.

His knowledge and experience are backed by America's broadest line of mechanical power transmission equipment—Dodge precision-built bearings, sheaves, pulleys, clutches and other drive components. Transmissioneer means advanced design in power drives.

Transmissioneering service is nation-wide—there are 210 Dodge factory graduate Transmissioneers in principal cities. Whenever you have a problem in power application, call a Transmissioneer—your local Dodge distributor. He has the latest answer. Often your immediate needs can be supplied from local stock.

DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA, U. S. A.



# DODGE

MISHAWAKA

THE RIGHT DRIVE FOR THE JOB

When inquiring specify CP A1860 . . . see information request blank, pgs. 2-3



Armstrong traps on chlorobenzene stills, in phenol plant.

## 16 Armstrong Traps save 800 gals. fuel oil per week in chemical plant

Chemical plants represent another industry which uses thousands of Armstrong inverted-bucket steam traps to save fuel, money, heating time, maintenance and manpower.

A typical example from our files is that of a chemical manufacturer in Iowa, which effected a cut in fuel consumption from 1,500 to 700 gallons a week by the installation of 16 Armstrong traps. The savings in fuel are \$2,500 a year. In addition, the management reported a reduction in boiler capacity requirements from 125 to 80 HP, and faster heating and more uniform temperatures of steam-heated kettles and other processing equipment.

Armstrong traps not only pass condensate as fast as it forms, without leakage of steam, but also eliminate air from the system and have the ability to handle all ordinary sludge and sediment. Armstrong traps do this through a combination of design features found in no other method of draining condensate. The patented free-floating valve and other engineering components insure freedom from wiredrawing in the valve orifice, permit holding tight against vacuum, and insure long life with negligible maintenance. Considerably over a million in use. Available in straight-through, angle and vertical piping styles, in all sizes and pressures.

The Armstrong Trap Book contains valuable data on trap operation, installation and service. We'll be glad to send you a copy.



**ARMSTRONG MACHINE WORKS**  
880 Maple Street Three Rivers, Michigan

# Armstrong

STEAM TRAPS • AIR TRAPS • PURGERS • HUMIDIFIERS

When inquiring specify CP A1861 — see information request blank, pgs. 2-3

## IDEAS

### Radiant Heat For Factories

*Offers interesting advantages for post-war industrial structures*

The increased use of radiant heating in all types of structures in postwar building programs is interestingly forecast in a recently issued handbook. In its introduction it briefly traces the history of radiant heating, referring to its application by the Romans at Bath, England 2000 years ago. Hot gases from charcoal fires were circulated through ducts to warm floors and walls. Pipe elements for modern radiant systems has rather crystallized around two basic patterns. (Installations during recent years have included, in addition to factories and office buildings, churches, medical buildings, libraries and residences.) These top systems are the continuous coil and the grid. Combinations of them are often used. The advantages of radiant heating are said to be: (1) No radiators in sight or occupying floor space. (2) Heating system completed with structural frame of building and heating can be done immediately to facilitate completion of interior work. (3) System can be used for cooling. (4) Floors are warmer. (5) Economical. An example of industrial application is in a one story basementless building. Radiant heating grids were used to cover the entire floor area. These were partially shop fabricated. Eight foot lengths of 1 1/4 in. wrought iron pipe were welded into two inch headers of the same material. These units were then moved to the job site and welded into long grids. Beneath each pipe a one inch thick strip of semi-rigid insulating

## BUCKETS

for Every Service



For excellence in  
war production

Link-Belt has been building and applying elevator buckets for over sixty years, and improvements in design have kept pace with improvements in production facilities. The line includes steel, malleable iron and Promal buckets of suitable size and type to meet any requirement. Stocked at all Link-Belt plants, warehouses and many distributors.

Send for Standard Equipment Catalog No. 850

**LINK-BELT COMPANY**

Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta,  
Minneapolis 5, Dallas 1, San Francisco 24, Toronto 6.  
Offices, warehouses and distributors in principal cities.

# LINK-BELT

When inquiring specify CP A1862 — see information request blank, pgs. 2-3



## SOLVE TUBE CLEANING PROBLEMS WITH *Airetool*



If you have a tube cleaning problem, it will pay you to investigate Airetool Tube Cleaners. You will find these versatile air, steam or water driven motors with the new form cutter heads will remove the most severe incrustations from tubes quickly, efficiently and thoroughly, without damaging the tubes. Made in sizes for tubes 1/2" to 24" I.D.; straight or curved.

WRITE FOR FREE BULLETINS  
500 Airetool and Yost-Superior  
Factory Bldgs., Springfield, Ohio

**AIRETOOL MANUFACTURING COMPANY**

When inquiring specify CP A1863 — see information request blank, pgs. 2-3

## Stokes MICROVAC Pumps

HEART OF HIGH VACUUM SYSTEM

HIGHER VACUUM  
in the Low Micron Range

GREATER  
VOLUMETRIC  
EFFICIENCY

LOW  
POWER  
REQUIREMENT

FIVE SIZES: from 18  
to 225 cu. ft. per min.

F. J. STOKES MACHINE CO.  
8974 Tabor Rd., Phila. 20, Pa.

# Stokes High Vacuum

PUMPS • GAUGES • EQUIPMENT

When inquiring specify CP A1864 — see information request blank, pgs. 2-3



## Men Who Make Every Move Count Use **A-PE-CO** PHOTOCOPYING

A-PE-CO photocopying is used by thousands of executives who make every move count. They never have to check A-PE-CO photocopies of anything written, printed, typed, photographed, or drawn — even if on both sides — because A-PE-CO can't make mistakes! This simple, low-cost method eliminates steno-copying, tracing, proofreading. Easy to operate — any boy or girl can make error-proof copies at one-minute speed, in the privacy of your own office. No darkroom, camera, or film is needed.

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\$55  
Copies up to  
18 x 22

IT'S THE NATION'S NEW BUSINESS HABIT

When inquiring specify CP A1865 — see information request blank, pgs. 2-3

## Simplicity

### of INSTALLATION and OPERATION

So simple and complete is the Cleaver-Brooks Steam Generator that 24 hours after arrival it can be in full operation. No special foundations needed — existing concrete floors will suffice. No high, costly smokestack is required — a simple roof-high vent carries off all exhaust gases of combustion. Your Cleaver-Brooks Steam Generator is delivered as a complete, factory-assembled and tested, "packaged" unit ready for connection to service outlets.

#### CLEAVER-BROOKS COMPANY

5324 N. 33rd Street • Milwaukee 9, Wisconsin

WRITE on your business letterhead for the Free Steam Cost-Calculator — a ready-reference slide rule showing the comparative steam costs when using oil or coal as fuel.

**Cleaver-Brooks** STEAM GENERATORS

When inquiring specify CP A1866 — see information request blank, pgs. 2-3

## IDEAS

material was used to restrict downward flow of heat. Concrete slab was then poured over pipes and crushed rock fill. A 1/6 HP pump provides circulation. (Data from Manual — "Wrought Iron for Radiant Heating." A. M. Byers Co., Pittsburgh.)

## Sky-Scraper Type Insulated Stack

Sectionally supported — no cumulative load on fire brick lining



STACK erected in heights up to 300 feet

space is provided between the insulation and the outer tile throughout the stack. It is easy to erect and maintain, railings and ladders easily installed. Can be erected in heights up to 300 feet. Vents are located at top and bottom of stack. (Chicago Fire Brick Co., 1467 Elston Ave., Chicago, Ill.)

## Food & Beverage Plant Detergent

Soluble in soft, hard water, alkaline solutions

Uses — In metal degreasing, pulp, paper mills, textile, rubber, insecticides and transportation equipment. Also in beverage plants.

Description — A synthetic detergent of the sodium alkyl sulfonate type derived from a petroleum base. Contains about 17.5% carbon equivalent to 35% organic content. Light buff colored flakes. Soluble in soft water, hard water and alkaline solutions. Stable in solutions of high alkali concentration. High solubility permits preparation of concentrated solutions. pH 8.5-9.2 in dilute aqueous solutions. Density (flakes) 31 pounds per cu. ft. Good surface tension depressant and emulsifying agent at low concentrations. Additional information on "Nyttron" Detergent on request.

THE SOLVAY PROCESS CO., Dept. CP, 40 Rector St., New York 6, N. Y.

When inquiring specify CP A1867 — see information request blank, pgs. 2-3

## PAYLOADERS REPLACE MISSING MANPOWER



Why worry about the men who are not to be had? In many process plants, the manpower problem for handling bulk materials has been eliminated with Hough Payloaders. These compact, readily-maneuverable units speedily pick up their loads, hoist them and carry them to nearby or distant points and dump them into trucks, bins or pits. The Model "HA" Payloader, pictured, will load, carry 100' and dump at the rate of 25 tons or more per hour. Note how easily this unit goes in and out of box cars, where it is a great time saver. Numbers of Payloaders are used by DuPont, Johns-Manville, Virginia-Carolina and the General Chemical Company for handling bulk materials. Ask for Bulletin 149.



**THE FRANK G. HOUGH CO.**  
Libertyville, Illinois  
"Since 1920"

**HOUGH Payloader SHOVELS**

When inquiring specify CP A1868 — see information request blank, pgs. 2-3

## DUST CONTROL DIVIDENDS



You get extra dividends when you come to Pangborn with your Dust Control problems — extra dividends through our forty years of engineering, experience and research in the control of Industrial Dust.

No dust problem is too large or too small for efficient and economical solution by Pangborn. Bring yours to us, today, and receive the benefit of these extra dividends.

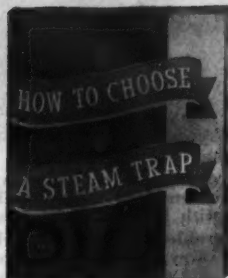
Dust Control Bulletin #909 sent upon request.

**PANGBORN**

WORLD'S LARGEST MANUFACTURER OF DUST COLLECTING AND FLAY CLEANING EQUIPMENT  
PANGBORN CORPORATION HAGERSTOWN, MARYLAND

When inquiring specify CP A1869 — see information request blank, pgs. 2-3

# WHAT is the most economical steam trap for this steam line?



Send for this FREE BOOK



Super-Silvertops can be piped as an elbow or straight-in-line

## You'll find the answer in this FREE BOOK

● Economy is an important factor in the selection of a Steam Trap. You want a dependable trap, of course, one that's economical in price—that has large capacity—but you also want a trap that is economical to install and remove for inspection. You want the most for your money! That's why we urge every Steam Trap buyer to send for a copy of the book, "How To Choose A Steam Trap" . . . It explains Steam Trap economy in detail. It's yours for the asking.

THE V. D. ANDERSON COMPANY  
1954 W. 96th ST. • CLEVELAND 2, OHIO

## Super-Silvertop

When inquiring specify CP A1870 — see information request blank, pgs. 2-3



## NEW LITERATURE

The following literature has been issued recently by manufacturers of the products discussed and is available to chemical process manufacturing executives on request. Address requests to the publishers by using handy request form, pages 2-3, or write to the manufacturers direct.

### Book Covers Scientific and Technological Aspects of the Plastics Industry

"Plastics — Scientific & Technological," by H. Donald Fleck is an up-to-date and comprehensive book covering the scientific and technological aspects of the ever-growing plastics industry. It comprises a critical survey of the literature and a correlation of scattered data which will be of value both to chemists of the plastics industry and to the practical men whose work requires the knowledge of the chemistry and technology of plastics. The book is also particularly suited as a text for college courses on plastics. The description of reactions and details of procedure, complete to the last proportion and temperature, will be useful in conducting plastic research, whether this is carried out in a college or an industrial laboratory.

The newest developments in plastic materials both in the United States and in Europe are discussed in great detail. This book is replete with useful tables, diagrams and data which will be of interest primarily to technicians, chemists, professional men and students who are seeking much more than an elementary book on the subject.

Some of the chapter headings are: "History of Plastics," "Raw Materials," "Chemistry of Plastic Materials," "Synthetic Resins," and the "Chemical, Physical and Electrical

Testing of Plastics." The book contains 352 pages. It is \$6.50. DO NOT SEND ANY REMITTANCES US but to Chemical Publishing Co. at address below. Requests for brochure can, however, be indicated on the request slip by checking number below on slip.

CHEMICAL PUBLISHING CO., Dept. CP, 234 King  
Brooklyn, N. Y.

When inquiring specify CP A1872 — see information request blank, pgs. 2-3

### Mineral Medium for Agitation, Aeration Filtration and Use as a Catalyst Carrier

"Filtros" plates for aeration, agitation and diffusion the subject of a twelve page booklet that gives complete details as to the properties of this mineral substance and its applications. "Filtros" is a rigid, strong, uniform porous, acid proof mineral medium composed essentially of silica. It is porous by nature and not by artificial means. It withstands all ordinary mechanical stresses and abrasion of commercial processes, is unaffected by rapid temperature changes of as much as 150° F., and since it is chemically inert, it may be used with all chemicals which do not attack silica. It is made in seven standard grades. Controlled variations in pore structure provide a full

## WANT TO MOVE HEAVY BULK MATERIALS AT LOWER COST PER TON?



THIS NEW BULLETIN TELLS YOU HOW!

manual operations.

Easy to install—Rex Leak-Proof Apron Conveyors require no extra space. They can be used as feeders—or as long horizontal or inclined conveyors. Capacities range from a few to hundreds of tons per hour.

Find out more about Rex Leak-Proof Apron Conveyors—what they have done for other plants—what they can do for yours. Send for your copy of the new Rex Bulletin No. 462. It gives detailed information on types, capacities, designs, and other important features. Write Chain Belt Company, 1694 W. Bruce Street, Milwaukee 4, Wis.



APRON  
CONVEYORS

CHAIN BELT COMPANY OF MILWAUKEE

When inquiring specify CP A1871 . . . see information request blank, pgs. 2-3

## Surety TURN-CUFF SURESEAL

SYNTHETIC  
RUBBER

## GLOVES

for  
More SAFETY Extra SERVICE LIFE

Tests show Surety Sureseal Synthetic protects hands 14 times longer than other synthetics or natural rubber. Proof against acids, oils, solvents, all skin-irritating liquids. Patented TURN-CUFF gives extra protection, keeps liquids from running down arms. Surety TURN-CUFFS are hard to snag, resist abrasion. Get Surety for safety!

**Surety GLOVE SELECTOR** shows character of all types of gloves, materials recommended for every industrial safety job. Write now for your copy!



THE Surety RUBBER COMPANY  
CARROLLTON, OHIO

When inquiring specify CP A1873 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## NEW LITERATURE

wide range in rated flow capacity. Some of the present uses are: aeration, agitation, diffusion, and filtration of gases and liquids. Because of its porous nature it is used for electrolytic tank linings. It is being successfully used as a catalyst carrier. Supplied in plates 12 x 12 x 1/2 inch it can be furnished in curved shapes, grooved bottom plates, cylinders, discs, etc.

ULTROS, INC., Dept. CP, Howard St., East Rochester, N. Y.

When inquiring specify CP A1874 — see information request blank, pgs. 2-3

### "Glo-Tech" — New Technique for Producing Precision Bore Tubing

An eight-page-multi-colored catalog, profusely illustrated, tells the story of the development of "Glo-Tech" — the new technique for producing precision bore tubing. Only a few years ago glass formed to precise internal dimensions was obtainable from plant located in foreign country. This was expensive and sizes and lengths were limited. The "Glo-Tech" process makes available precision bore tubing extremely accurate (tolerances of 0.0002 inches) at one third previous cost. The extensive range of standard sizes runs from 0.013 inches I. D. to 6 inches I. D. in lengths up to 100 inches and almost any imaginable shape including square, hexagonal, oval, conical, concave, curved and fluted. The pages of the catalog show many specimens of "Glo-Tech" tubing of all shapes and sizes: "Glo-Tech" tubing for High Accuracy Manometers, Barometers, Viscometers, and other scientific instruments are illustrated. Also Absorption Cells, both fused and jointless types, the latter an innovation made possible by precision bore tubing. Many examples of precision bore glass specialties created by skilled glass technicians are included. Catalog 95A on request.

FISCHER & PORTER CO., Dept. CP, 945 County Line Road, Amboro, Pa.

When inquiring specify CP A1875 — see information request blank, pgs. 2-3

### Open Steel Grating & Stair Treads

A book of complete, practical information on open steel grating and stair treads is profusely illustrated with photographs of the products in actual plant and building uses, and contains detailed construction particulars, drawings and tabular specifications, providing full installation data for every requirement. Subjects covered are the uses of riveted and welded types of grating for open steel flooring, stairways, stair treads, fire escapes, loading platforms, decks for bridges and ships, automobile wash racks, drains, catwalks, tower-stairs, boiler and engine rooms, sidewalks, partitions — in all, nearly fifty of the numerous distinct services.

WM. F. KLEMP CO., Dept. CP, 6161 S. Melvina Ave., Chicago 38, Ill.

When inquiring specify CP A1876 — see information request blank, pgs. 2-3

### Fluorescent Analysis of Chemicals, Liquids

A bulletin entitled "Fluorochemistry" has recently been published by manufacturer of ultra-violet fluorescent lamps and the information contained therein is of practical value to those interested in fluorescent analysis. It presents the basic concept of luminescence and provides information fundamental to the new applications of fluorochemistry. The theory and utility fluorescence is fully discussed. The bulletin contains many helpful facts applicable to studies of chemists and physicists. Copies are available on request.

ULTRA-VIOLET PRODUCTS, INC., Dept. CP, 5205 Santa Monica Blvd., Los Angeles 27, Calif.

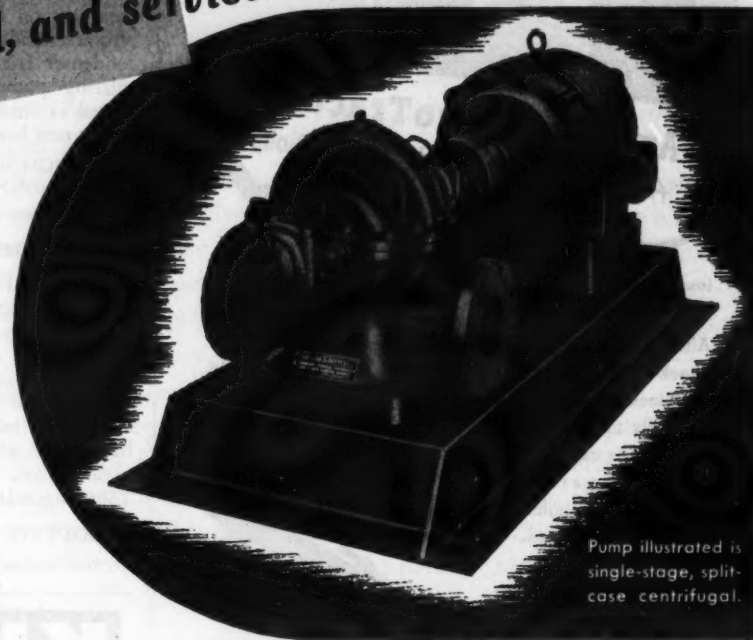
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MAY-JUNE, 1945

# Complete PUMPING UNITS ... built, guaranteed, and serviced by ONE manufacturer

Fairbanks-Morse complete pumping units offer you much more than sustained high efficiency. There are in addition these three vitally important advantages:

1. **Combined Responsibility.** Designed and built in one factory, pump and driver (motor or engine) are perfectly matched and covered by a single guarantee.
2. **Successful UNIT Performance.** Tested in one plant under expert engineering supervision, pumps and drivers assure a superior result to the buyer.
3. **Service from One Source.** No questions about who is to make any required repairs or adjustments.



Pump illustrated is single-stage, split-case centrifugal.

**YOU** can get these major advantages from Fairbanks-Morse... because Fairbanks-Morse designs and builds all components of an outstanding line of complete pumping units. To see a qualified engineer about any pumping job, write Fairbanks, Morse & Co., Fairbanks-Morse Bldg., Chicago 5, Ill.

BUY WAR BONDS FOR KEEPS

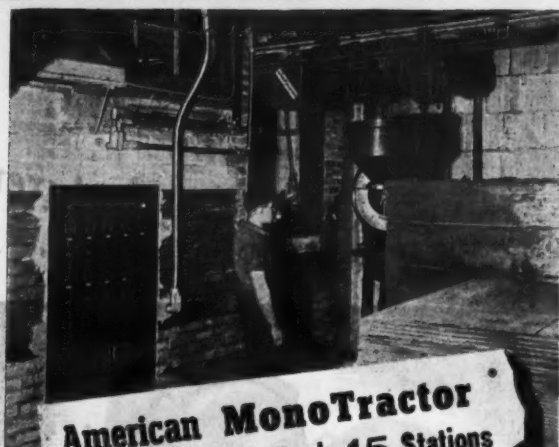
# Fairbanks-Morse

*A name worth remembering*



Diesel Locomotives • Diesel Engines • Generators • Motors • Pumps • Scales  
Magneto • Stokers • Railroad Motor Cars and Standpipes • Farm Equipment

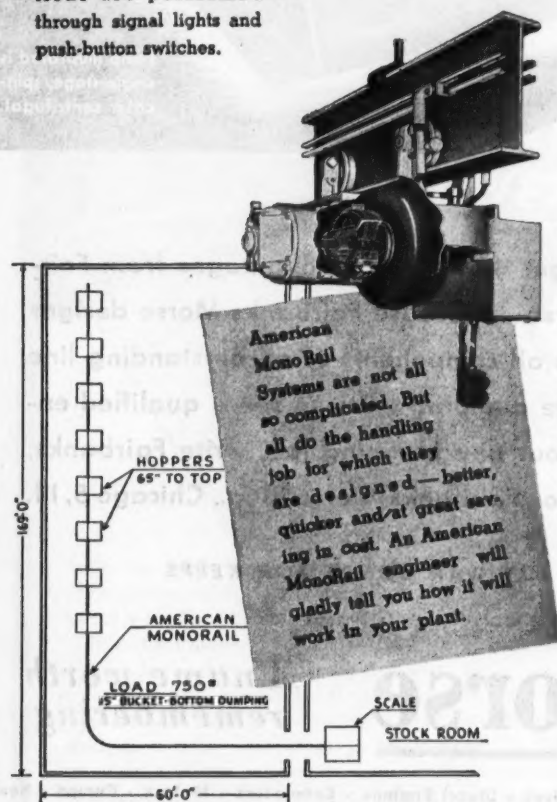
When inquiring specify CP A1878 . . . see information request blank, pgs. 2-3



## American MonoTractor Automatically Feeds 15 Stations

Here is an American MonoRail System that is almost human. By remote control, semi-precious metal is delivered to fifteen tube-forming machines.

After dispatcher fills container with slugs he carefully check-weighs the load and dispatches it to one of the 15 machines. Operator at machine where carrier stops automatically unloads the metal slugs by push-button control and returns carrier to central station. All handling operations are performed through signal lights and push-button switches.



**THE AMERICAN MONORAIL CO.**  
13123 Athens Ave. Cleveland 7, Ohio

When inquiring specify CP A1870 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Steam Power Plant Planning Guide

Planning information on 10,000 to 60,000 kw. condensing turbines, surface condensers and auxiliaries, for building a new plant or adding generator capacity to an existing one, is presented in the new "Steam Power Plant Planning Guide." Part I of the new 40-page booklet illustrates types of turbines, and charts turbine sizes and speeds. Part 2 on Performance Data covers basic operating conditions, including effect of deviation in pressures and temperatures on heat rates; regenerative feed-water heating; recommended condenser sizes, and condenser dimensions; condenser friction; impeller, propeller and axial type circulating pumps; and condensate pumps. Data is presented in chart and table form for easy selection. Copies of the new booklet (B-3153) on request.

WESTINGHOUSE ELEC. & MFG. CO., Dept. CP, 511 Wood St., Pittsburgh, Pa.

When inquiring specify CP A1880 — see information request blank, pgs. 2-3

### Cleaners for Straight & Curved Tubes

An improved lubrication system is the feature of a series of tube cleaners available in a variety of models. A colorful, four page, illustrated booklet tells all about them and by means of a giant size sectional view emphasizes operating and design features. An exploded view of its simple assembly and an illustration of its operation in curved tube are also of interest. Several models are illustrated on the back page which also lists motor numbers for tubes of various sizes. Copies of Bulletin Y-19 on Lagonda Series 1300 Lagonda Type on request.

ELLIOTT CO., Dept. CP, Jeanette, Pa.

When inquiring specify CP A1881 — see information request blank, pgs. 2-3

## KINNEY

### HIGH VACUUM PUMPS



Single Stage,  
Model VSD

Single Stage and Compound, widely used for electronic products, drugs, etc. Single Stage Pumps maintain low absolute pressures to 10 microns; Compound to 0.5 micron or better.



Compound,  
Model CVD

### LIQUID PUMPS



Heliquad Pump

The Heliquad Pump for marine, refinery and general service. The Rotating Plunger Pump for liquids hard to pump; serves as meter and pump.



Rotating Plunger  
Pump

## KINNEY MANUFACTURING CO.

3573 Washington St., Boston 30, Mass.  
New York Chicago Philadelphia Los Angeles San Francisco  
We also manufacture Clutches, Vacuum Tight Valves and Bituminous Distributors.

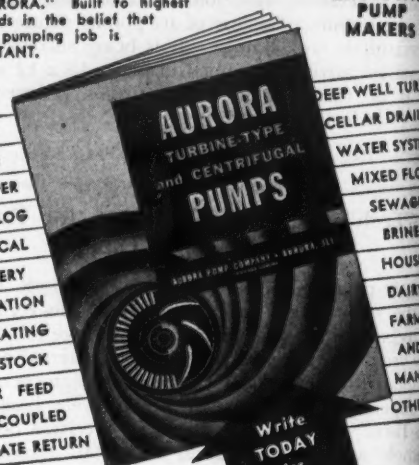
When inquiring specify CP A1882 — see information request blank, pgs. 2-3

## PUMPS YOU CAN TRUST

If you are a user of pumps FOR ANY PURPOSE you will welcome acquaintance with the modern, efficient and lasting "PUMPS by AURORA." Built to highest standards in the belief that EVERY pumping job is IMPORTANT.

BUILT  
by  
EXCLUSIVE  
PUMP  
MAKERS

SUMP  
BILGE  
TRANSFER  
NON-CLOG  
CHEMICAL  
REFINERY  
DISTILLATION  
CIRCULATING  
PAPER STOCK  
BOILER FEED  
CLOSE-COUPLED  
CONDENSATE RETURN



— or  
See Our Catalog  
in SWEETS

DISTRIBUTORS IN PRINCIPAL CITIES



**AURORA**  
PUMP COMPANY

62 Loucks St., AURORA, ILLINOIS

When inquiring specify CP A1883 — see information request blank, pgs. 2-3

## Uniform Separation

FOOD PRODUCTS — CHEMICALS — METALLICS  
NON-METALLIC MINERALS

The new model GAYCO Centrifugal air separator makes possible the uniform and increased recovery of fine material with a range of 40 to 400 mesh.

- Greater Capacity
- Cleaner Trailings
- 99% Through 325 Mesh
- 25% to 30% greater recovery of fines
- Not affected by variation in speed or rate of feed



### The Gayco Separator Handles SUCH PRODUCTS AS

BAGASSE  
CASEIN  
COCA POWDER  
COTTONSEED MEAL  
FERTILIZER  
GROUND HAIR  
GROUND OATS  
GUM ARABIC  
SOY FLOUR  
SPICES  
SUGAR

## Universal Road Machinery Co.

RUBERT M. GAY DIVISION 117 Liberty St. New York 6, N. Y.  
Canadian Representative: F. H. Hopkins & Co., Ltd., Montreal  
FACTORY & LABORATORY, KINGSTON, N. Y.

When inquiring specify CP A1884 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



RUST  
BUILT  
by  
CLUSIVE  
PUMP  
MAKERS  
WELL TURN  
AR DRAIN  
TER SYSTEM  
IXED FLOW  
SEWAGE  
BRINE  
HOUSE  
DAIRY  
FARM  
AND  
MANY  
OTHER

## MAKE FLOW CONTROL AND SHUT-OFF EASY

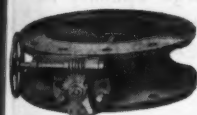
### For Any Temperature Corrosion Resistant

Rockwell Blast-Gate Valves offer the advantages of quick movement—full pipe area tight shut-off—easy adjustment for any flow. Made of any metal in slide and butterfly types with hand pull, lever, hand wheel, chain wheel or special automatic controls for all pipe sizes from 1" to 48" and pressures to 15 p. s. i.

Rockwell Valves save on installation cost—save in service—Catalog No. 402 tells how. W. S. Rockwell Co., 56 Church St., New York 7, N. Y.



Slide Valve—threaded or flanged; pull, lever or wheel control.



"Kwikleen" Slide Valve, as above, with removable clean-out plate for quick clean-out of clogging solids.

Butterfly Valve, flanged type, with lever, hand wheel, chain wheel and automatic control and dial indicator.

## ROCKWELL VALVES

SLIDE and BUTTERFLY  
FOR AIR • GAS • LIQUIDS • SOLIDS

When inquiring specify CP A1885 — see information request blank, pgs. 2-3

## MOISTURE ENGINEERING

with the KATHABAR System  
automatically and accurately provides



### THE PROPER HUMIDITY

—Independently of temperature—  
for processing operations in the  
manufacturing of:

DRUGS, PHARMACEUTICALS, CHEMICALS,  
FOODS, OR ANY PRODUCT OR MATERIAL  
AFFECTED BY EXCESS HUMIDITY  
CONDITIONS... Write for information.

SURFACE COMBUSTION • TOLEDO 1, OHIO

## Kathabar System of HUMIDITY CONTROL

(ADVANCED AIR CONDITIONING)

When inquiring specify CP A1886 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Processing Equipment Fabricated From Alloys For Heat & Corrosion Resistance

Catalog issued by organization specializing in the design and fabrication of corrosion and heat resisting alloys relates in interesting detail the sequence of operations in producing equipment to customer's need. Engineering, studying requirements such as type and dimension of alloy to withstand pressure, temperature, corrective reacting agents and most effective methods of heating, cooling, agitating the charge. Then follows brief descriptions of other steps: layout, templates, shearing, cutting, forming, welding, X-ray examination, heat treatment, machining, tests and inspections. A number of typical pieces of equipment are pictured and specifications listed. These include a resin kettle in which the charge is heated by means of Dowtherm circulating through a two compartment steel jacket. A bellows type expansion joint compensates for the unequal expansion between the inner shell and the jacket, vacuum stills, de-aerating tank, acid still and tubular condenser. Another interesting unit is a soap blender used in preparation of special soaps in which the charge is mixed by means of a model metal ribbon agitator directly connected to the worm gear reducer. Latter pages of the book are devoted to views of a few of the units in company's line of standard pipe fittings. Copies of catalog entitled "Alloy Equipment" are sent on request.

ALLOY FABRICATORS, INC., Dept. CP,  
Perth Amboy, N. J.

When inquiring specify CP A1887  
— see information request blank, pgs. 2-3

### Bringing Nature Indoors

"Bringing Nature Indoors" with the use of "Optonic" colors is the theme of a profusely illustrated book that explains in interesting detail the advantages of an eye ease system or reducing color fatigue in industry. In explaining the workings of this system, charts and diagrams together with the text emphasize how the paints are formulated to fortify colors in which prevailing light — either sunlight or artificial — is deficient or softer than those which are excessive. The important accomplishments of this system when utilized in plants are said to include: increased employee efficiency, greatly reduced fatigue, generally safer operations and promotion of employee cooperation in sanitation. Copies of booklet on request.

ARCO CO., Dept. CP, 7313 Bessemer Ave.,  
Cleveland, Ohio.

When inquiring specify CP A1888  
— see information request blank, pgs. 2-3

## The Case of the Forgotten Pumps

An Amsco engineer called at a large food and chemical products plant to check the performance of an installation of Amsco-Nagle 3" type "QW" pumps which had been in service for some time. He was told that the pumps "had practically been forgotten."

No more gratifying summation could have been received, for when a pump gives trouble — especially where operating delays ensue — it is very definitely remembered. Further inquiry disclosed that the pumps had been performing exceptionally well.

These Amsco-Nagle pumps handle crude corn oil and were installed to replace horizontal shaft pumps in pits below water level. The horizontal shaft pumps were not satisfactory because with the crude corn oil there is a very gritty shell which gets into the

stuffing box and causes leakage, as well as a possible fire-hazard. The Amsco-Nagle type "QW" pump has no stuffing box and the motor is placed up and above the floor level, where it is accessible and out of danger from flooding or shorting.

The "QW" pump is fitted with anti-friction bearings throughout, and the lower bearings are completely shielded from exposure to the liquid or slurry in which the pump is submerged. This pump is finding increasing favor in abusive applications around process plants, steel mills and in ore treating work.

Amsco-Nagle pumps are made in two horizontal and three vertical types and in sizes from 3/4" to 16". Capacities up to 10,000 g.p.m. Heads up to 200'. Send for Bulletin No. 940.



Amsco No. 217 Welding Rod for Hard-Surfacing Equipment Parts Exposed to Heat described in Bulletin 941-W.

Left—Detail drawing of Amsco-Nagle Type "QW" Pump. P-33-N Two Type "QW" frame 14 pumps installed for handling sludge from a dust collector system. This sludge contains rather coarse and frequently siliceous sands.



**Amsco**  
AMERICAN MANGANESE STEEL DIVISION  
Chicago Heights, Illinois  
FOUNDRIES AT CHICAGO HEIGHTS, ILL.; NEW CASTLE, DEL.; DENVER, COLO.; OAKLAND, CALIF.; LOS ANGELES, CALIF.; ST. LOUIS, MO.  
OFFICES IN PRINCIPAL CITIES

**AMERICAN  
Brake Shoe**

When inquiring specify CP A1889 — see information request blank, pgs. 2-3

Heat Dies, Platens, Molds or  
Machine Parts with

## CHROMALOX

### Electric Cartridge Heaters

#### Many Types and Sizes

Diameters  $\frac{3}{8}$ " to  $3\frac{1}{2}$ ". Lengths  
to 40". Ratings 30 to 8750  
Watts. Steel or Brass Sheath.  
Various terminal arrangements.



#### Easy to Install

Insert in holes drilled for a  
sliding fit. When in use,  
the cartridges expand and  
fit tightly assuring good,  
thermal contact.

Chromalox Electric Cartridge Heaters heat dies, platens, plastic molds, process machinery or machine parts to the temperature you need—up to 900°F.—quickly and economically.

Chromalox Electric Cartridge Heaters provide dependable uniformity of temperature—a big factor in the molding of plastics and similar compounds.

Chromalox Electric Cartridge Heaters provide portable heat where you want it when you want it. With moving dies or machine parts you have no problem that a few feet of flexible cable cannot solve.

**WANT MORE KNOW-HOW?** Write for "100 Ways to Apply Electric Heat." Catalog and address of nearest Chromalox Application Engineer.

EDWIN L. WIEGAND CO., 7517 THOMAS BLVD., PITTSBURGH 8, PA.

## CHROMALOX

"Electric Heat at its Best"

18-9A

When inquiring specify CP A1890 — see information request blank, pgs. 2-3

## NEW LITERATURE

### New Bulletin on Ceramics for Electrical and Other Technical Uses

Bulletin No. 444, recently published by the American Lava Corporation, will prove a valuable tool in the hands of Engineers, Designers and Research Men. It is also a helpful, informative guide. AlSiMag Ceramic insulator bodies, each with its particular physical and electrical characteristics, are concisely described and the uses indicated. Typical designs taken from a roster of more than 25,000 distinct items are splendidly illustrated — in groups of applications covering electrical, electronic, industrial heating, chemical, automotive and other fields. Property charts and other technical data, together with practical information on manufacturing processes, are included. Here is valuable, authentic information... the latest work on Ceramic insulators. . . in concise, easy-to-use form. Copies sent on request.

AMERICAN LAVA CORP., Dept. CP, Chattanooga 5, Tenn.

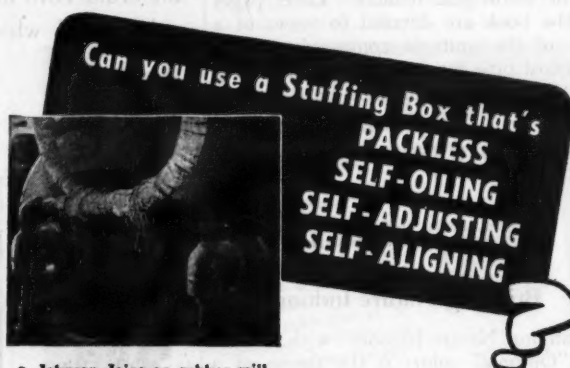
When inquiring specify CP A1891 — see information request blank, pgs. 2-3

### Clamps & Fittings for Hose; Also for Splicing Electric Welding Cable

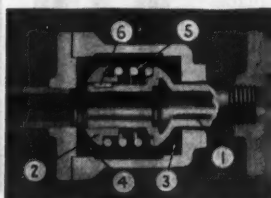
Catalog on "punch-lok" clamps and fittings for many purposes is available upon request. The catalog features pictorial descriptions, accompanied by text and there are tables giving data on all the various sizes. Tools used in application are also described.

B. F. GOODRICH CO., Dept. CP, Akron, Ohio.

When inquiring specify CP A1892 — see information request blank, pgs. 2-3



• Johnson Joint on rubber mill



• Nipple (1), fastened to roll or drum. Sliding collar (2), keyed (6) to nipple. Carbon graphite seal ring (3) and bearing ring (4) eliminate oiling and packing. Spring (5) is for initial seating only; joint is pressure sealed.

**IF** you have a problem that has to do with getting steam, or liquids under pressure, into rotating machine parts, don't overlook the possibilities of the Johnson Rotary Pressure Joint.

It is being used on Paper Making and Textile machinery, in cold strip steel mills, on machine tools, and for an increasingly wide range of other applications. So completely does it outmode the old style stuffing box that industry has already adopted over 50,000 Johnson Joints in the few years since their development.

Write for complete information

## The Johnson Corporation

825 WOOD STREET



THREE RIVERS, MICH.

When inquiring specify CP A1893 — see information request blank, pgs. 2-3

## Thread Bolts?



This patented dieholder—with large opening below die for instant clearance of turnings—is available for either the Nos. 2 or 3 BEAVER Drophead Ratchet Pipe Threaders. Eliminates torn threads due to chips packing in the die.

Write for Catalog 44

## BEAVER PIPE TOOLS

545 REVIEW AVENUE  
WARREN, OHIO

When inquiring specify CP A1894 — see information request blank, pgs. 2-3

## PUMPS

APPLIED BY INGERSOLL-RAND



★ The Motorpump is a twenty-four hour a day pumping unit. Pump and motor are built together on the same shaft, making it unusually compact and rigid. It is available with motors from  $\frac{1}{4}$  to 40 hp to handle from 5 to 1800 gpm against pressures as high as 215 psi.



## Ingersoll-Rand

Cameron Pump Division  
11 BROADWAY NEW YORK 4 N.Y.

When inquiring specify CP A1895 — see information request blank, pgs. 2-3



# CARDOX

## FIRE TRUCK



Goes into  
Action Fast ...  
With 3 TONS of  
Carbon Dioxide

Applied at the  
Rate of Hundreds  
of Pounds  
Per Minute

By putting swift wheels under  
tons of low pressure carbon  
dioxide, a Cardox Fire Truck  
provides major fire fighting  
facilities for protecting widely  
scattered hazards. Entirely self-  
contained, it knocks out large  
or small fires fast with a tremendous mass discharge of cold,  
inert carbon dioxide. No highly specialized personnel required  
for its efficient operation. Meets fire fighting needs of tough  
hazards in many industries. Write for Bulletin 1655.

CARDOX CORPORATION, Bell Building, Chicago 1, Illinois

When inquiring specify CP A1896 — see information request blank, pgs. 2-3

When an  
Operation  
Hangs by a Thread

ASK  
BURCOTT MILLS

FABRICS  
for use in  
every industry

BLEACHED  
MUSLIN  
for  
FILTERING  
INSULATING  
STRAINING

The fabrics of industry ARE important  
— to us as well as to you. The very  
threads — the weave — the texture —  
all the characteristics of industrial fabrics  
and the functions they must perform  
— are a considered part of our obligation  
to you. When you ASK BURCOTT  
MILLS for the solution to your problem  
— whatever it may be, as long as it  
involves fabrics, don't worry — just  
write.

Stocks in Chicago and 20 other warehouses  
throughout the country.  
Priority rating AA2X, pursuant to M-317-A  
and/or M-328.

COTTON  
DUCK  
CHEESE  
CLOTH  
SHEETING  
FILTER  
CLOTH  
OSNABURG

BURCOTT MILLS  
622 West Fulton St., Chicago 6, Ill.

When inquiring specify CP A1897 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Work Bench Fluorescent Light Needs No Ballast, Has Aluminum Reflector

A fluorescent fixture that easily clamps  
securely to work benches, tables or other  
surfaces up to 2 1/4 inches thick or will  
fit on pipe of round or square stock up  
to 2 inches O. D. is described in illus-  
trated bulletin. This is a newly re-  
designed model of the maker's "Localite"  
unit FLB and includes a 20 gauge alu-  
minum reflector with better cut-off angle  
than was provided with non-metallic re-  
flector used previously. The reflector is  
15 3/8 inches long, 9 3/8 inches wide and  
65/8 inches to center of ball which con-  
nects with arm. Outside reflector finish  
is wrinkle gray, inside gloss white.  
Arms and base are wrinkle gray and a  
selection of arms and bases to suit spe-  
cific needs is offered. No conventional  
ballast is required. This model operates  
with a 60-V.5 ampere S-11, frosted, in-  
termediate screw base ballast lamp takes  
the place of conventional ballast. Op-  
erates on 110-125 volts, AC or DC;  
utilizes two 14 watt fluorescent lamps.  
Total wattage of the unit is 45 watts  
on AC and 38 watts on DC. Power fac-  
tor is approximately 90%. In excess of  
100 F. C. is provided for critical work  
areas. Copies of bulletin on request.

POSTORIA PRESSED STEEL CORP., Dept.  
CP, Fostoria, Ohio.

When inquiring specify CP A1898  
— see information request blank, pgs. 2-3

### Automatic Meter-Waste Valve in One Assembly

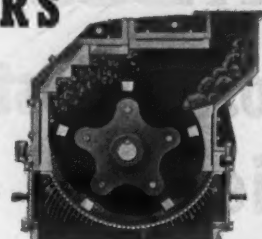
Automatic metering and waste valve, for  
water supply lines, that provides in one  
compact assembly means for handling  
both services, is fully explained in two  
page bulletin. The first of two schematic  
drawings shows construction, indicates  
dimensions, while a second presents im-  
portant details of installation. The valve  
is especially suitable for use in unheated  
areas subject to freezing as for example:  
water supply to spray nozzles on evapora-  
tive condensers located in unheated areas,  
supply lines to roof ponds and spray  
nozzles, supply lines to outside sill cocks.  
The valve is ordinarily used in construc-  
tion with a standard solenoid valve,  
which may however be replaced with  
hand shut-off valve. In this case, the  
automatic waste feature will function  
when the hand valve is turned off. The  
body is of cast bronze, with stainless  
steel springs and brass seat discs.  
Metering stem and packing nut are of  
brass. Made in one size only with 1/2  
in. M.P.T. inlet and F.P.T. outlets. Bul-  
letin 960 on request.

ALCO VALVE CO., Dept. 865 Kingsland  
Ave., St. Louis, Mo.

When inquiring specify CP A1899  
— see information request blank, pgs. 2-3

## PULVERIZERS

Swing hammer type for  
reducing limestone, shale,  
soda ash and similar mate-  
rials to 10 mesh or coarser  
Four standard sizes, all  
with manganese steel ham-  
mers and hardened breaker  
blocks that insure rapid  
crushing at low power cost.  
Send for catalog.



## BELT IDLERS

For belts 14 to 48 inches wide. The pulleys are sturdy, rugged,  
built with straight sides to shed dust and rounded corners to  
prevent injury to the belt. They are evenly balanced and run  
true insuring long life.  
Furnished troughed or  
flat, in standard and  
many special designs.



## TAKE-UPS

For moderate, intermediate and heavy duty service. The Style  
H heavy duty take-up illustrated herewith is available with solid  
journal, pillow block or anti-friction bearings,—features a pro-  
tected screw, requires little clearance.  
Write for fully descriptive catalog.



THE C.O. BARTLETT & SNOW CO.

6270 HARVARD AVE. • CLEVELAND 5, OHIO

DRYERS, COOLERS, CALCINERS AND KILNS

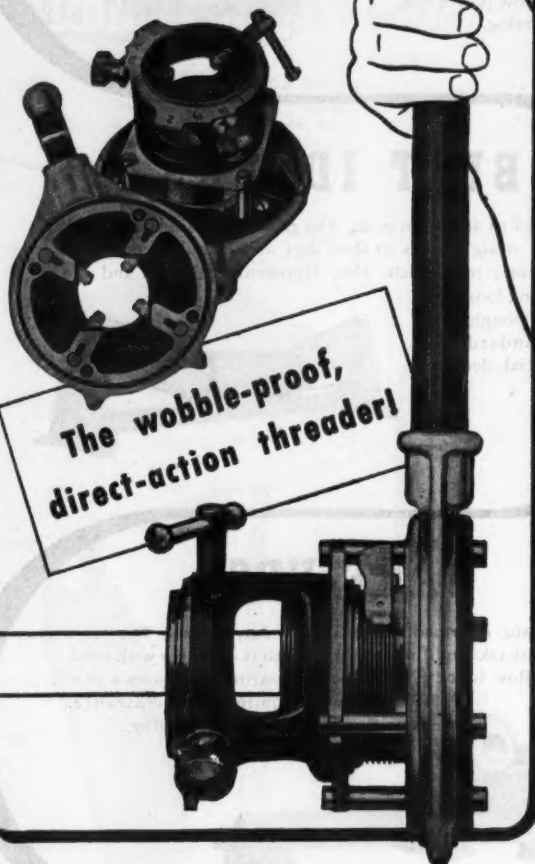
BOILER PLANT COAL AND ASH HANDLING SYSTEMS

CONVEYORS, CRUSHERS, FEEDERS, SCREENS

When inquiring specify CP A1900 — see information request blank, pgs. 2-3

# RIGID

## No. 1R Poster Die Stock



● Compare this **RIGID** with any poster die stock on the market and see how it gives you better threading service for your money. Direct action, handle to head to chasers, prevents cock-wobble: result—less work, smoother threads. Workholder is quick and fool-proof, no bushings to bother with. Alloy or high-speed steel chaser dies for 1", 1¼", 1½" and 2". A rugged steel-and-malleable tool you'll like, including the price! Ask for the **RIGID** 1R at your Supply House—demand exceeds supply, but keep asking.

# RIGID

**WORK-SAVER PIPE TOOLS**  
THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U.S.A.

When inquiring specify CP A1001 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Posters Emphasize Hand Protection

Posters that dramatically emphasize the importance of proper hand care and protection through observing proper washing methods and use of protective creams are available for use in plant washrooms and other suitable places such as safety bulletin boards. These may be used for general promotion of better washing procedure as most of them do not identify themselves with any specific product. Posters available on request.

WEST DISINFECTING CO., Dept. FP, Long Island City 1, N. Y.

When inquiring specify CP A1902 — see information request blank, pgs. 2-3

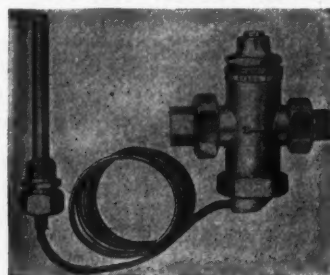
### Steam Generators — Fully Automatic; Weight, Space Requirements Cut one Half

A complete line of expansion type steam generators that are fully automatic are shown in an attractive multi-colored catalog. When desired operating pressure is attained, the generator floats on line, stops when steam in excess of requirements is generated, and automatically restarts to maintain the load. The boiler comes to a full working pressure, from a cold start in 3 to 5 minutes. These generators are entirely self-contained and are extremely simple to operate. They weigh only half as much and require one fourth the room of conventional equipment. They are explosion-proof, and are tested at 1000 pounds pressure with an ultimate bursting point above 2000 pounds. They are unaffected by vibration or violent motion and require no special foundations.

CLAYTON MFG. CO., Dept. CP, Alhambra, California.

When inquiring specify CP A1903 — see information request blank, pgs. 2-3

### Control Tank or Processing Within ½"



Sterling  
No. 150 Series Control

Accurate Temperature Control is ENGINEERED into this Sterling No. 150 Series Control to maintain proper water temperature in storage tanks, dish washers, scalding vats, steam tables, coffee urns, feed water heaters and other similar equipment. The No. 150 Series operates on steam pressures up to 125 lbs. Being a fully balanced valve, its temperature adjustment is not affected by fluctuating steam pressures. You can depend upon it for efficient temperature control — operates on drop in temperature of 1 or ½" or less. BULLETIN No. 102 sent you upon request. Your local jobber will quote you.

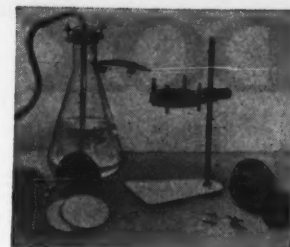
**STERLING, INC.**

3738 N. Holton St.

Milwaukee 12, Wisconsin



When inquiring specify CP A1904 — see information request blank, pgs. 2-3



### PYROGEN & BACTERIAL RETENTIVE

## Laboratory Filters

This laboratory filter makes the tremendous demand for the pyrogen retentive type unit which is so necessary in many new test lots and small runs. Constructed in bronze, plated, or in stainless steel. Permits double filtration in series. Has built-in stone fibre eliminator. A minimum of parts make unit easy to clean and simple to assemble. Available in 4" and 8" diameter sizes.

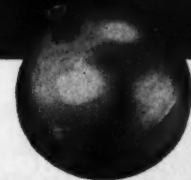
★ Bulletin 15 fully describes Ertel Laboratory and Production Filters is available without obligation.

# ERTEL

LIQUID HANDLING EQUIPMENT ENGINEERS

When inquiring specify CP A1905 — see information request blank, pgs. 2-3

## STAINLESS STEEL FLOATS for severe service



The strength and corrosion resistance of stainless steel makes floats of this material particularly adapted to many services where ordinary floats would be short-lived. Stainless steel floats may be safely used at operating temperatures up to 800 deg. F. For more severe service, at temperatures up to 1600 deg. F., floats of stabilized 18-8 stainless steel, with Chicago Float Works stabilized weld, make the most of the exceptional corrosion resistance of this material. Spherical (ball) shape only, with standard connection fitting, or without connection. Standard sizes, 3 to 10 inch diameter.

Get complete data on stainless steel floats, as well as all other types, in our general catalog, sent upon request.

**CHICAGO FLOAT WORKS, INC.**

"Nothing but Floats" since 1915  
2330 SOUTH WESTERN AVENUE, CHICAGO 8, ILLINOIS

When inquiring specify CP A1906 — see information request blank, pgs. 2-3



# "first" FOR GREATER SAFETY

NEW CESCO HOOD  
RESISTS STRONGEST ACIDS

Now chemical workers get 100% Safety First with the new and improved CESCO ACID HOOD. The most corrosive acids can't eat through the Acitex hood or window. It provides safety with comfort, too. The hood fits smoothly, easily over head and shoulders, ties at the waist. An air-feed unit, plus special side vents, gives wearers plenty of fresh air and splash-proof ventilation.

## LOOK AT THESE TEST RESULTS!

Under tests, the tough CESCO Acitex shows these reactions to the 6 most powerful acids:

Nitric: NO EFFECT	Acetic: NO EFFECT
Sulphuric: SLIGHT STAIN; NO OTHER EFFECT	Hydrofluoric: NO EFFECT
Hydrochloric: NO EFFECT	Carbolic (liquefied): SLIGHT DIS- TORTION; NO DELETERIOUS EFFECT



Learn more about this Acid Hood now.

CHICAGO EYE SHIELD CO.

2338 WARREN BOULEVARD • CHICAGO 12, ILLINOIS

**CESCO** FOR SAFETY

When inquiring specify CP A1907 — see information request blank, pgs. 2-3



## They Like its Looks . . . its Light!

DESIGNED for high quality fluorescent lighting at lower cost, the BEACON is a "honey" for lighting essential offices. Provides smooth, shadowless light to help handle paper work faster and reduce eyestrain. Maintenance is especially easy, with no horizontal surfaces on which dust can collect. New rigid design louvers hinged to make lamp replacement simple. Ask your Graybar house for details or write the F. W. Wakefield Brass Co., Vermilion, Ohio.



Push the attack . . . Buy extra War Bonds for Victory

*Wakefield*



When inquiring specify CP A1908 — see information request blank, pgs. 2-3

MAY-JUNE, 1945

## NEW LITERATURE

### Corrosion Resistant Units for Process Plants

An unusually complete selection of corrosion-proof chemical equipment is offered in recently published catalog. In the section devoted to piping sufficient information is given to enable an engineer to design a complete installation without further correspondence. The same pattern is followed throughout. The section on rectangular tanks is another typical illustration of the thorough manner in which all essential information has been compiled. The initial pages of the catalog describe "Haveg" from which these various pieces of equipment are produced. It is molded from a mixture of a special acid digested asbestos and a synthetic phenol-formaldehyde resin. The composition has strength, toughness, durability and great corrosion resistance. It is made in various grades. Some of the equipment included in the wide selection offered consists of such units as: agers, agitators, fan housings, fume ducts, pipe, pumps, rolls, sheets, sinks, tanks, towers and valves. Many illustrations of typical units are to be found throughout the book. Copies of Bulletin — F-4 on request.

HAVEG CORP., Dept. CP, Newark, Del.

When inquiring specify CP A1909  
— see information request blank, pgs. 2-3

### Tilting U-Tube Mechanical Meter

Complete details are given in a recently issued bulletin on U-tube mechanical type meters. Three fundamental features incorporated in this type of high torque mechanical meter are: (1) Flow measurement by a response to difference in pressure by a mercury seal in the U-tube; (2) Weighing mass by means of a beam balance; (3) The use of torsion tubes as the scientific solution of stuffing box problem. Publication — 3010-31 — on request.

COCHRANE CORP., Dept. FP, 17th & Allegheny Ave., Philadelphia 32, Pa.

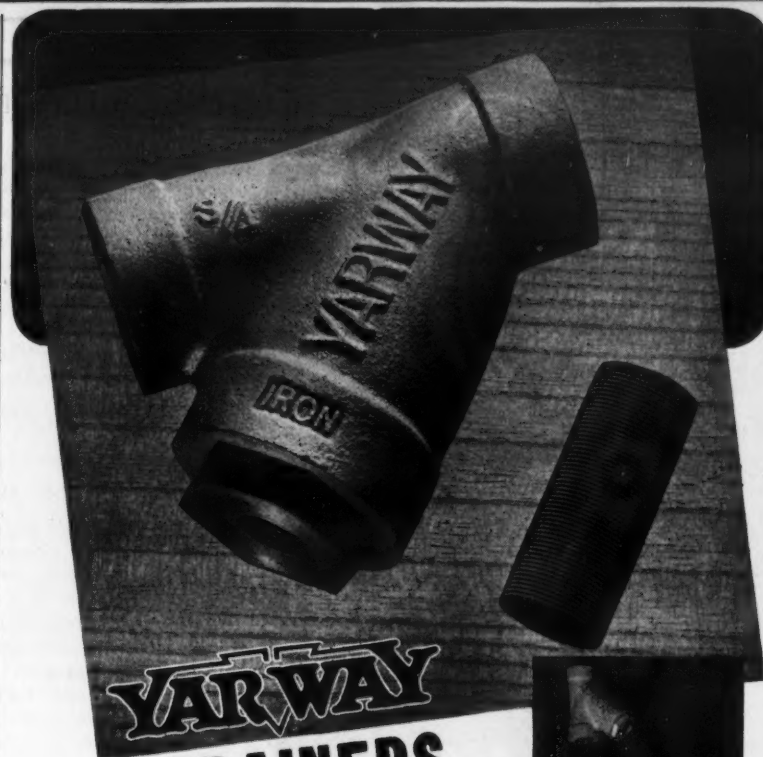
When inquiring specify CP A1910  
— see information request blank, pgs. 2-3

### Counting Devices For Production Control

Circular describes a complete selection of counting machines for such services as counting strokes on drill presses, screw machines, folding, packing units, coil winders, counting boxes, bottles, cases, measuring wire. Included in the line are pre-determined counters which operate lights, alarm or relays when desired pre-set point has been reached. Copies on request.

DURANT MFG. CO., Dept. CP, 1912 N. Buffum St., Milwaukee 1, Wis.

When inquiring specify CP A1911  
— see information request blank, pgs. 2-3



## YARWAY STRAINERS "Police the Pipelines"

YARWAY STRAINERS are selling by the thousands because they are better engineered for the service.

"The Screen is the Thing"—a high-grade, woven Monel wire screen that stops the dirt, lets fluids flow freely.

Then, too, purchasers like the body finish—Cadmium plating inside and out for protection against corrosion.

And last but not least, it is "Easy to Clean" having a steel blow-off bushing, precision machined with straight thread. Screen and bushing come out together—go back together, automatically aligning.

Six sizes, 1/2" to 2" for pressures up to 600 lb serve practically all strainer needs.

Sold by over 100 Mill Supply Houses. See your Supply House or write for Bulletin S-200.

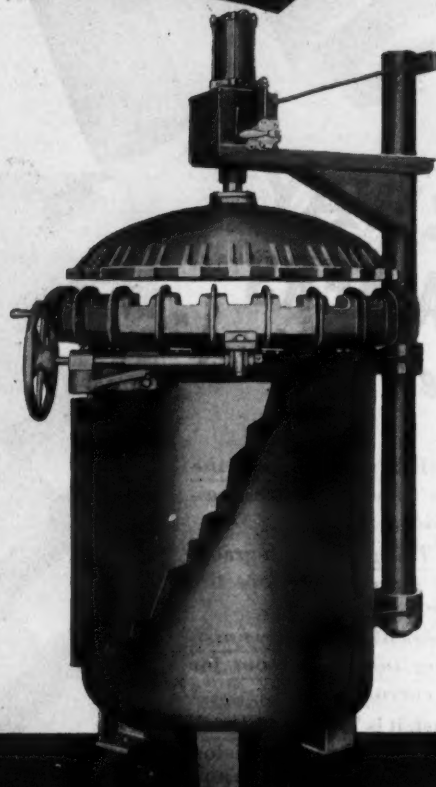
YARNALL-WARING COMPANY  
125 Mermoid Avenue PHILADELPHIA 18, PA.

**YARWAY STRAINERS**

When inquiring specify CP A1912 — see information request blank, pgs. 2-3

# J&C AUTOCLAVE

THE IDEAL METHOD FOR IMPREG-  
NATING MAGNESIUM, ALUMINUM  
AND OTHER MATERIALS



If you have a problem of densifying magnesium, aluminum, wood or fibrous materials, it will pay you to get the facts about the J & C Autoclave. This ingenious, impregnating system, designed and perfected for one of the country's largest chemical firms is equipped for either steam or electrical heating, and has proven its efficiency. Write for complete information.

JACKSON & CHURCH COMPANY, SAGINAW, MICHIGAN

When Inquiring specify CP A1913 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Safety Equipment for Eye and Head Protection — Goggles, Shield, Masks

Forty-eight page catalog presents detailed information and shows many pictures eye and face protection equipment — goggles, face shields, glasses etc. for easy and accurate selection of equipment for specific requirements based on nature of work, operating conditions, etc. The unusually wide selection offered includes acid goggles, acid hoods, air-fed masks, respirators, dust goggles, fireproof eye-shades, fume masks, cup-type goggles for practically all types of workers requiring this type of goggle protection, grinder guards, helmet goggles and toe guards.

CHICAGO EYE SHIELD CO., Dept. CP, 2300 Warren Blvd., Chicago, Ill.

When Inquiring specify CP A1914 — see information request blank, pgs. 2-3

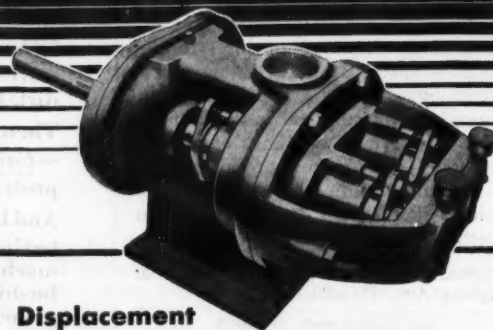
### Flexible Shaft Remote Valve Operating Gear

Thirty-six page illustrated catalog-manual serves as a guide in the selection, installation and use of flexible shafting for remote controls for valves and all types of equipment actuated by a rotating shaft. In addition to marine applications, basic principles developed in these shafts make them thoroughly adapted for other fields. Remote control by means of this maker's shaft does not interfere with local operation of the valve by use of regular hand wheel. Intermediate hand wheels can also be used if desired. Copies on request.

STOW MFG. CO., Dept. CP, Binghamton, N. Y.

When Inquiring specify CP A1915 — see information request blank, pgs. 2-3

## with BUMP PUMPS



### Displacement Is Positive at Any Speed or Pressure

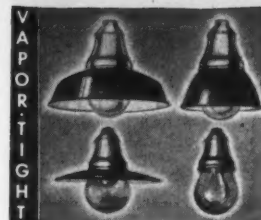
Whether you pump light or viscous liquids, there's a Bump Pump to meet your requirements — available in capacities from 1/2 to 400 GPM. Bump Pumps deliver a constant volume per revolution regardless of speed or pressure . . . can be operated at slow speeds . . . are self-priming under vacuums or against head pressures . . . no agitation, churning, nor vibration within the pump.



**SEND NOW!**  
For new catalog with complete details, dimensions, capacities, etc. Yours upon request.

The **BUMP PUMP CO.**  
LA CROSSE, WISCONSIN

When Inquiring specify CP A1916 — see information request blank, pgs. 2-3



# Get Benjamin

Recommendations

## EXPLOSION-PROOF and VAPOR-TIGHT

### Lighting Units

Benjamin's years of experience in lighting will be found particularly of value today when every step must be taken to protect against fire, explosion and accidents, not only from the standpoint of protecting life and property but also from the standpoint of insuring an uninterrupted flow of production for war purposes. In the solution of the special lighting problems, Benjamin's recommendations will prove helpful. Benjamin Equipment available for this purpose meets all requirements of the National Electrical Code and bears the label of the Underwriters' Laboratories. For further data, send for the catalog bulletins. Address: Benjamin Electric Mfg. Co., Des Plaines, Ill.



## BENJAMIN

Lighting and Signal Equipment  
Distributed Exclusively Through Electrical Wholesalers

When Inquiring specify CP A1917 — see information request blank, pgs. 2-3



## Contamination in Compressed Air Is a Costly Luxury . . . . .

Moisture, oil and dirt present in all air that comes from air compressors has a destructive effect on air-operated tools and devices. Sprayed finishes are also spoiled by dirty, wet air. The Aridifier completely and continuously removes all contamination from compressed air by centrifugal force. Write for Bulletin 939-A.

LOGAN ENGINEERING CO.  
4900 Lawrence Ave. Chicago 30, Ill.  
Makers of the Logan Lathe

**Logan ARIDIFIER**  
Dries and Cleans Compressed Air



When Inquiring specify CP A1918 — see information request blank, pgs. 2-3



## This man can help you gear your plant for post-war

The Baker Material Handling Engineer is at your service to help you meet postwar demands for lower production costs, increased plant capacity and improved working conditions. His intimate knowledge of inside transportation problems—in plant, warehouse, shipping or receiving platforms—enables him to evaluate your complete handling set-up and recommend the proper equipment to achieve objectives listed below, for present or postwar needs.

### INCREASED PLANT CAPACITY

Baker trucks can help you multiply the value of plant floor space by storing material, by moving bulky material in yards or yards, by keeping materials moving and machines working for most efficient production.

### GREATER MANPOWER EFFICIENCY

By handling materials faster in bigger loads, using one man (or woman) to do the work of 6 or 8 with hand trucks, getting more out of skilled labor, Baker trucks can improve manpower efficiency.

### LOWER PRODUCTION COSTS

Since "handling" is not strictly a production operation, it offers excellent opportunities for reducing overhead. Rent, machine and labor costs, loading (and unloading) costs, spoilage, accidents—all can be cut by proper use of Baker Trucks.

### FASTER DELIVERIES

Streamlining production and movements of material with Baker Trucks can speed deliveries, shipping in "unit packages" on skids or pallets means less damage in transit. Faster loading and unloading and better warehouse handling are also important factors.

### IMPROVED PLANT SAFETY

Material Handling accidents account for approximately 6 million working days lost annually. Eliminating the handling of heavy objects, overloading hand trucks, improper stacking, and overhead dangers by the use of Baker Trucks can reduce this waste.

Plant and production managers, traffic managers, superintendents, purchasing agents and any others concerned with material handling will find the new Baker Catalog No. 18 a valuable reference. WRITE FOR YOUR COPY.

BAKER INDUSTRIAL TRUCK DIVISION of The Baker-Rauland Company  
2163 West 25th Street • Cleveland, Ohio

## Baker INDUSTRIAL TRUCKS

When inquiring specify CP A1919 — see information request blank, pgs. 2-3

## "HOT" ACIDS and ALKALIES HANDLED LIKE WATER by ALOYCO VALVES



With Aloyco Stainless Steel Valves you can route corrosive fluids as flexibly as water because you may choose Gate, Globe, Angle, "Y", Needle, Check, other types of valves and a full line of fittings. Made of solid stainless even to the bonnet bolting, Aloyco Valves prevent contamination, last longer, open and close effortlessly, resist impact and temperature changes. Easily taken apart and re-assembled, they can be quickly cleaned. Made by specialists in stainless steel valves. Available in all commercial stainless alloys. Write for details, mentioning fluid and flow conditions.

**ALOYCO**  
Stainless Steel  
VALVES and FITTINGS  
ALOY STEEL PRODUCTS COMPANY, INC.  
100 WEST 42ND STREET — LINDEN, NEW YORK

When inquiring specify CP A1920 — see information request blank, pgs. 2-3

## NEW LITERATURE

### "How to Get Out of Tight Spots" in Pallet & Lift Truck Handling

A series of bulletins (Nos. 1-10) on materials handling with emphasis upon selection, operation and maintenance of electric propelled equipment are based on plant interviews and study of methods. For example bulletin No. 4 tells how battery powered motor operated platform type lift truck of 4000 pound capacity handles 400-500 tons of concrete and cinder blocks per day. No. 10 as its title implies tells about "Operating Kinks — How to Get out of Tight Spots" — with pallet trucks and fork lift trucks. Illustrations show how such difficult maneuvers involving close clearances are simplified. Copies are available on request.

AUTOMATIC TRANSPORTATION, Dept. CP, 101 W. 87th St., Chicago, Ill.

When inquiring specify CP A1921 — see information request blank, pgs. 2-3

### 1/4 Ton Electric Hoist Built to Big Hoist Specifications

Complete details concerning construction and applications of 1/4 ton electric are to be found in recently issued bulletin. This hoist is said to be built to large hoist specifications, providing heavier construction throughout for hard continuous service. It has a heavy duty 3/4 HP hoist and crane type motor with high starting torque. Gearing, heavy duty spur type; lowering brake automatic, Weston screw-and-disc type. The electric brake built-in with motor has full load torque capacity. Weight — 195 pounds for bolt suspension type, 225 pounds for plain trolley type. Trolley is shock proof. Bulletin on 1/4 ton Lo-Head Electric hoist on request.

AMERICAN ENG'G. CO., Dept. CP, Philadelphia 25, Pa.

When inquiring specify CP A1922 — see information request blank, pgs. 2-3

### Handy Tables of Screw Thread Dimensions

A handy table of machine screw thread dimensions, printed on durable pocket sized card is offered by manufacturer of fasteners. The table shows the nominal diameter and threads per inch (National coarse and National fine) for all standard machine screws and the maximum and minimum major, minor and pitch diameters of each size. In addition tap drill sizes and dimensions for each screw are also given and along one edge of the card is printed a handy rule. Cards are available on request.

MANUFACTURER'S SCREW PRODUCTS, Dept. CP, 292 West Hubbard St., Chicago 10, Ill.

When inquiring specify CP A1923 — see information request blank, pgs. 2-3

## DUST ALWAYS costs money

## DRACCO DUST CONTROL ALWAYS SAVES MONEY

Dust in any plant, in small or large amounts, will always cost money — in some plants more than others depending upon many factors. DRACCO Dust Control ALWAYS saves money. In some installations where valuables are recovered the amount saved is often substantial. Where dust is eliminated equipment lasts longer and requires less maintenance — better working conditions results in increased plant efficiency and, therefore, lower production costs. Get expert advice, consult DRACCO Engineers on any dust condition. They have eliminated dust hazards of every description.

For Further Information Write

## DRACCO CORPORATION

4060 E. 116th St., Cleveland 5, Ohio New York Office: 130 W. 42nd St.

DUST CONTROL EQUIPMENT  
PNEUMATIC CONVEYORS • METAL FABRICATION

When inquiring specify CP A1924 — see information request blank, pgs. 2-3



### "National" Truck Type Tray Dryers

For batch drying of various chemicals in large quantities. Recirculating system carries heated air to each tray in sufficient volume and at proper velocity to assure uniform drying of each tray load, without dusting. Illustration shows battery of dryers especially designed for material having high initial water content and requiring maximum uniformity in drying. May be steam, gas or electric heated.

Chemical Dryers  
of All Types  
and Sizes



Special Drying  
and Heating  
Equipment

**THE NATIONAL DRYING MACHINERY CO.**  
2709 N. HANCOCK STREET, PHILADELPHIA 33, PA.

When inquiring specify CP A1925 — see information request blank, pgs. 2-3

## Equipment for Production

### Bellows of Spring-Tempered Metals Made to Requirements

*The simplicity of design of each diaphragm enables close control of the temper of the metal during fabrication*



BELLOWS . . . extended

Uses — As main elements or components of expansion joints; switch actuators; flexible couplings; pressure detectors; shock absorbers; governors; hydraulic plungers; pump pistons; packless valves; dynamometers; pressure compensators; shock accumulators; rotating seals; components in recording or indicating devices.

Description — Joining of scientifically contoured diaphragms at their inner and outer peripheries, forms flanges of these new type bellows. Various types of diaphragm designs used in combination with all known methods of metal joining are used to meet engineering determinations of requirements. (Wide latitudes of controlled flexibility and extremes of resistance or sensitivity result from fabrication innovations producing spring-action characteristics.) These bellows are built of tempered metals capable of greater deflection or movement than ductile metals con-

ventionally employed in one-piece bellows. Such tempered metal, with flexing restricted to areas between peripheral joints, produces spring-like characteristics not attained with ductile metals. Significant life-tests including an operation of a bellows in a testing device operating at the rate of 1800 strokes per minute (one quarter inch stroke). The bellows are subjected to alternate pressure and vacuum, in a pump for which it was designed, for eight months continuous operation. After 600 million flexures the bellows showed no mechanical or other failure. These bellows are particularly suitable to applications requiring extreme accuracy in spring rate as well as hysteresis. A pressure travel diagram would show a single and substantially straight line. This characteristic is essential in an application such as aircraft carburetor control where the bellows must assume a specific position for a specific altitude. As the bellows is made of spring tempered material, in most applications the spring rate of the bellows is sufficient for actuating the device without the addition of calibrating springs. The inherent spring-rate is more consistent than that of commercial springs. Another application which requires spring-like characteristics is one where the bellows must normally be operated at certain stated pressures, but in addition is subjected to severe surges. Such bellows are calibrated to operate within their required limits and are then surge tested to make certain the calibration is not disturbed. The simplicity of design of each diaphragm allows close control of the temper of the metal during fabrication; therefore the use of phosphor bronze, brass, copper, beryllium cop-

## Simplicity Gyration Screens



Simplicity Gyration Screens are available in 63 different sizes or models.

"Write for further information"

View shows a battery of five Simplicity 3' x 6' Single Deck Screens, part of sixteen units operating in a Western starch plant. These screens are used for germ separation, for clean-up and for the various washing operations. Feed is at the rate of 90 gallons per minute per each machine equipped with 150 mesh cloth.

Using Simplicity Gyration Screens in place of reels enabled this company to handle a 52% greater grind and at the same time reduce the amount of starch in the wash tailings by 20%.

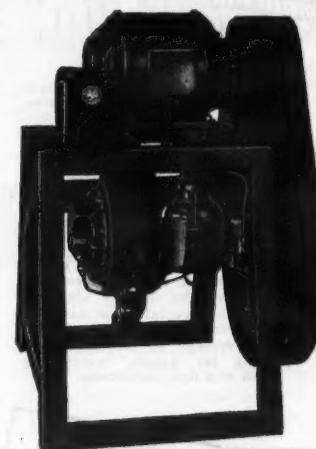
**SIMPLICITY ENGINEERING COMPANY**  
DURAND, MICHIGAN

For Canada: Watrous Limited, Brantford, Ontario

When inquiring specify CP A1926 . . . see information request blank, pgs. 2-3

### ROTARY LAMMERT QUIET VACUUM PUMPS

VACUUM TO 0.02 M.M. BAR. 3-580 C.F.M.



ENDURING HIGH VACUUM PERFORMANCE

**LAMMERT & MANN CO.**

215-21 N. WOOD ST. CHICAGO 12, ILL.

A HALF CENTURY OF SERVICE  
TO SCIENCE AND INDUSTRY

Investigate!  
MODEL SWMF.

**NEW!**

Continuous  
Self  
Purging  
Principle

Expels the  
Contaminating  
Influences

When inquiring specify CP A1927 — see information request blank, pgs. 2-4

CHEMICAL PREVIEW



## PRODUCTION



### BELLOWS FABRICATION LIMITATIONS ELIMINATED

For, stainless steel, steel, Monel, Inconel, nickel silver and sterling silver present no problem. Because of their wide range of sensitivity, the advantages of various metals which can be used, compact construction and unlimited length and diameter ranges, "Spring-life" Bellows open a field of bellows applications hitherto believed impossible. A 44-page booklet, profusely illustrated, telling various applications, uses and advantages of "Spring-life" Bellows, is available on request.

COOK ELECTRIC CO., Dept. CP, 2700 No. Southport Ave., Chicago 14, Ill.

When inquiring specify CP A1928 — see information request blank, pgs. 2-3

### Immersion Steam Tank Heater For Car or Truck Tanks

For use with many materials in speeding emptying of mobile tank units

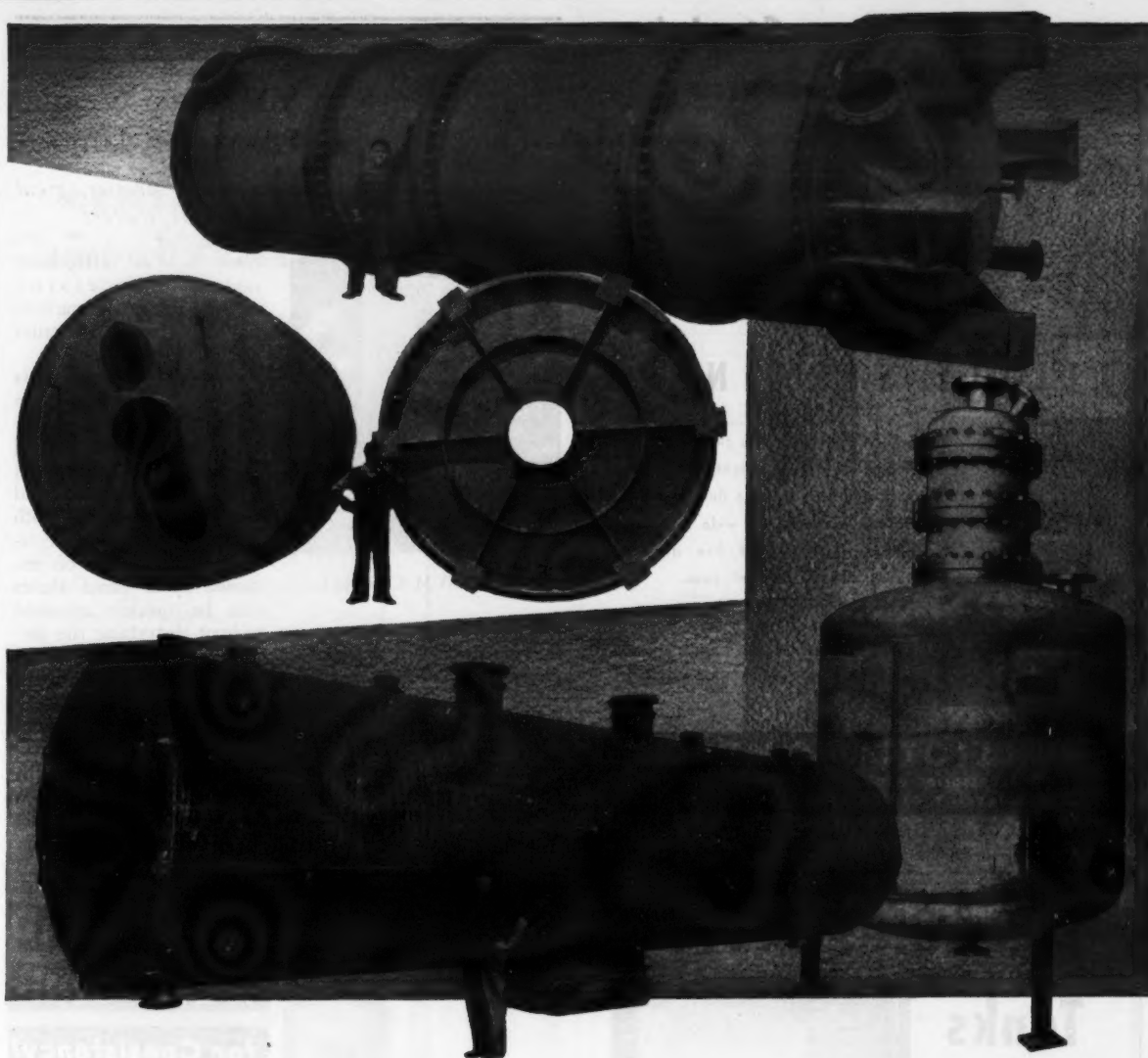


HEATER easily handled

have cross handles which aid in positioning the heater over discharge outlet, in blocking it at various depths and in removal. The number 642 model for cars has 6 1 in. OD "Fintubes". Truck heater is furnished with four tubes. Fin length in each case is 3'6". Overall length approximately 9'6". Illustrated No. 451 on request.

THE BROWN FINTUBE CO., Dept. CP, 160 Filbert St., Elyria, Ohio.

When inquiring specify CP A1929 — see information request blank, pgs. 2-3



## HEAVY-WALL WELDED EQUIPMENT... by

Process equipment of all types in metal thicknesses up to 2½" is fabricated by Edge Moor to individual designs or specifications. Materials of construction include such metals as:

Carbon Steels	Monel	Inconel
Stainless Steels	Herculoy	Ni-Chrome
Clad Steels	High Chrome	Everdur
Nickel Steel	18-8 Alloys	Nickel

Edge Moor Heavy-Wall Welded Fabrication is approved by leading insurance companies and meets all commercial code requirements. For upwards of 60 years, Edge Moor has accumulated knowledge and experience in the design and fabrication of equipment for the Chemical, Petroleum and allied industries. We shall be pleased to place this experience at your disposal when you are considering additional plant equipment.

## EDGE MOOR

MAIN OFFICE AND WORKS  
EDGE MOOR, DELAWARE

Branch Offices:

New York 20, N. Y. . . . 30 Rockefeller Plaza  
Chicago 2, Ill. . . . One North LaSalle St.

When inquiring specify CP A1930 . . . see information request blank, pgs. 2-3

## Non-stop Straining Service . . .



To clear liquids from alcohol to molasses, use Twin Strainers (at left) which can be cleaned without shut-down. Also available, Single Strainers for use where service permits occasional time-out for dumping basket. All sizes.

## ELLIOTT STRAINERS



Self-cleaning Strainers clean water continuously, without attention. A small part of flow is used to flush out fouled strainer sections. In wide use for removing quantities of fine dirt from water. Nine different sizes.

Elliott has been named "Strainer headquarters." If you have a straining need, use our expert cooperation.

A-297

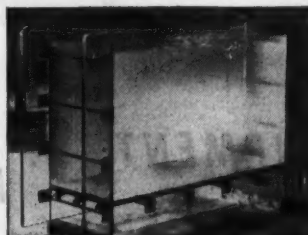


**ELLIOTT COMPANY**  
Accessories Dept. JEANNETTE, PA.  
DISTRICT OFFICES IN PRINCIPAL CITIES

When inquiring specify CP A1931 — see information request blank, pgs. 2-3

## FOR LONG LIFE..

## Tanks of GLASS



"PITTSBURGH" GLASS TANKS assure long service life because they are made of specially tempered glass. This glass is tough, durable, impervious to the strongest chemical solutions. And it can withstand sharp temperature shocks.

Available in transparent or opaque glass. Or as glass linings for your present tanks.



Send the coupon for full details  
GLASS TANKS BY "PITTSBURGH"

Pittsburgh Plate Glass Company  
2178-5 Grant Building, Pittsburgh 19, Pa.  
Please send me, without obligation, free literature on Glass Tanks by "Pittsburgh."

Name.....

Address.....

City..... State.....

**PITTSBURGH PLATE GLASS COMPANY**

When inquiring specify CP A1932 — see information request blank, pgs. 2-3

## PRODUCTION

## Aluminum Structure Cuts Weight Over 50% in Processing Units

*Quickly assembled, no concentrated stresses, great rigidity; can be used for trucks, trailers*



ALUMINUM CABINET

from the outside and replaced without disturbing the section not in need of attention.

**Description** — Manufactured of 61 ST alloy, these aluminum structures with panel sheets of .020" and .025" thickness, possess adequate rigidity for a wide variety of uses. Structure for truck bodies use sheets of .003" thickness. The makers state that it is not expected that the aluminum structure will replace steel in the many applications of their steel structures. The inherent characteristics

**Uses** — For refrigerator units and processing equipment, small machine housings, truck and trailer bodies.

**Features** — These units afford great savings in weight yet possess rigidity required in many food processing applications. All parts are dieformed and can be assembled with standard tools. In case repairs are required on enclosed units panel sheets can be quickly removed



*Why Gamble*  
**WITH LOADED DICE!**  
**PLAY SAFE WITH SAFETY**  
**JUSTRITE**

Justrite Safety Cans and Oily Waste Cans give maximum protection against the hazards of fire at a minimum cost. The Safety Cans, for handling and storing flammable liquids, are easy to handle... convenient to pour and fill. Justrite Safety Cans and Oily Waste Cans are approved for safety by Underwriters' Laboratories, Inc., and the Factory Mutual Fire Insurance Companies and so marked.

## OILY WASTE CAN

The safe container for dangerous, oily waste. Furnished with or without foot lever as desired. Top closes automatically. Body made of No. 24 gauge galvanized sheet steel... cover No. 22 gauge. Legs and handle are 1/4" band iron. Can is double seamed and soldered. Efficient, economical and safe.

Ask your supplier about Justrite Safety Products.

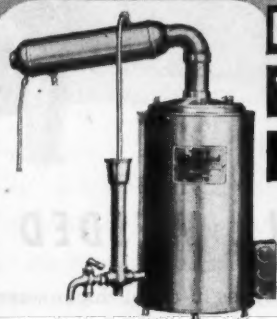
**JUSTRITE MANUFACTURING COMPANY**

2063 N. Southport Ave., Dept. B-5, Chicago 14, Ill.



When inquiring specify CP A1934 — see information request blank, pgs. 2-3

## BARNSTEAD Water Stills for Consistency!



You need never be uncertain about the quality of your distilled water if you have a Barnstead Water Still. For 66 years their record has been one of consistent performance... year in year out they produce the same high quality distillate. It never varies from hour to hour or day to day—you can rely on it anytime. At the same time you get unmatched economy and simplicity of operation and maintenance. Over 100 models to choose from... 1/2 to 1000 gallons per hour capacities. Write for Catalog "D".

**Barnstead**  
STILL & STEAM HEATER CO. INC.

44 LANESVILLE TERRACE, BOSTON 21, MASS.

When inquiring specify CP A1933 — see information request blank, pgs. 2-3

## FOUND...

**...ADDED PROFITS**  
**by Separating Solids from Liquids!**

L-B Screen separating soy bean oil from meal.

**RECOVERY** of waste products for conversion into salable goods... efficient separation of liquids and solids... cleaner drain pipes and reduced pollution... higher profits through lower costs. L-B Liquid Vibrating Screens give all these! Chemical and food products are dewatered, greases and oils recovered for use. Find out how the modern L-B method can be profitably applied to your screening job—WRITE today for new Book No. 1977!



**LINK-BELT COMPANY**

2045 W. Hunting Park Ave., Philadelphia, 40  
Offices in principal cities

**LINK-BELT Vibrating SCREENS**

When inquiring specify CP A1935 — see information request blank, pgs. 2-3



## PRODUCTION

aluminum make it particularly adapted to this special structure method of assembly which draws the panel sheet to minutely uniform tension between framing members and creates a union which approximates the full strength of the sheet. It is this uniform pre-tensing of the sheet which utilizes the great strength in light sheet metal and gives the structure its high strength-weight ratio. By placing the entire sheet in a strong, continuous, and equalized grip this method also eliminates the weakness of rivet holes or welds at which stresses are ordinarily concentrated. Accompanying view shows application of plates. This complete unit weighs only 128 lbs.

LINDSAY & LINDSAY, Dept. CP, 222 W. Adams St., Chicago, Ill.

When inquiring specify CP A1936 — see information request blank, pgs. 2-3

## Roller Markers Imprint Cartons

Units for continuous marking of brand name or trademark on products such as cheese are also available

For imprinting cartons, boxes, cases, crates such as brand names, manufacturer's name and address, description of contents, handling instructions, etc. Units for application on food products, as for example cheese, are for marking name, trade-mark, etc. and in a continuous or all-



### SELF-RETURN MARKER FOR IMPRINTING BOXES

over impression, if desired.

**Features** — These markers have a return mechanism so that when an imprint is made and operator removes unit from surface being marked, the die drum automatically returns to starting position ready for next impression. Space is provided for overtravel so that not more than one imprint is made. These rollers are also automatically inked and assemblies are available for printing in two or three colors side by side.

**Description** — Unit frames are of durable metal and drums are constructed with high degree of accuracy, some have ball-bearings; ink rollers are of solid felt, precision ground when desired. Self-return markers are furnished in sizes to imprint areas from 1½ x 4 inches to 9 x 15 inches. Units are available for continuous markings of strips 2 to 10 inches wide. Detailed information concerning individual requirements on request.

ADOLPH GOTTSCHO, INC., Dept. CP, 190 Duane St., New York 13, N. Y.

When inquiring specify CP A1937 — see information request blank, pgs. 2-3

## 3 NEW CENTRIFUGAL IMPROVEMENTS *to help you* IMPROVE COST-PRICE RATIO

*Again AT&M advances centrifugal design to provide even more efficient production in chemical processing... 3 new centrifugal improvements for absolute control in unloading hard-to-handle materials.*

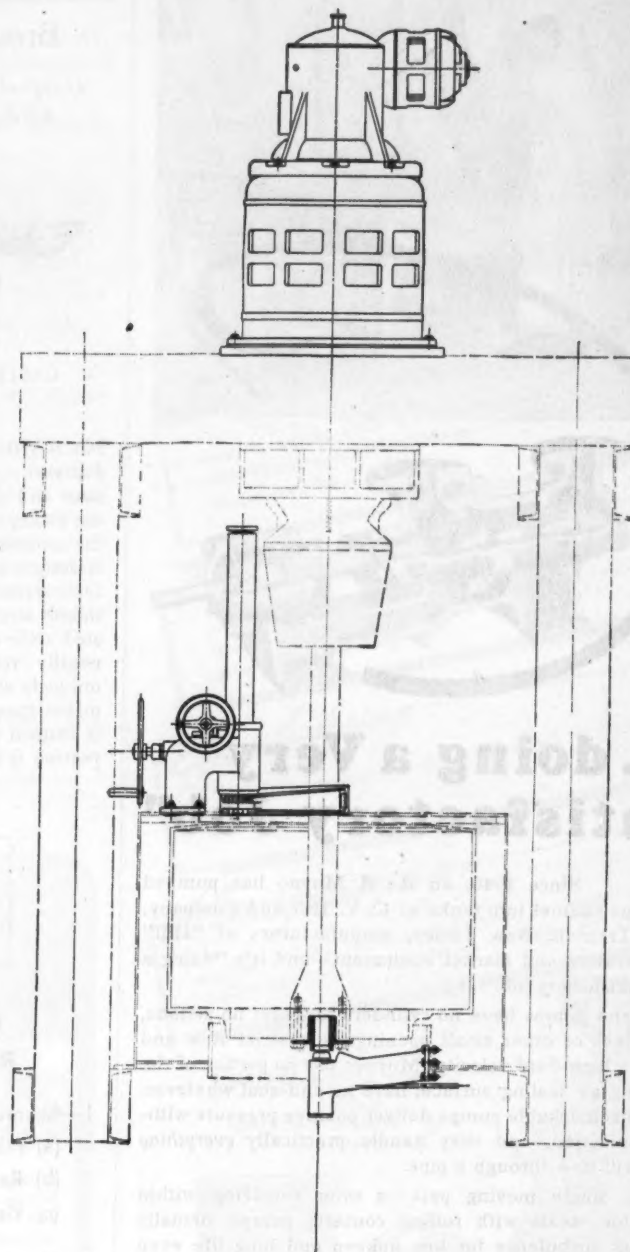
1. A radically redesigned, 2-motor free-wheeling drive with a much higher torque than before provides a constant low speed for discharging without load on the main motor.

2. A new \*discharger gives positive, accurate control over the depth of cut — controlled by worm and worm wheel. The shoe rests on the top of the curb during spinning operation.

3. A \*stabilizer located at the bottom of the basket prevents basket from gyrating. Operated by foot or power. It can be interlocked with cycle controls.

\*Both discharger and stabilizer can be used with ordinary baskets.

Send for complete information on these new developments—also, a copy of AT&M's useful booklet entitled "Better, Cheaper, Faster Processing". Now is a good time to line up your new equipment for more profitable production. AMERICAN TOOL & MACHINE COMPANY, 1425 Hyde Park Avenue, Boston, Mass. 30D Church Street, New York 17, N.Y.

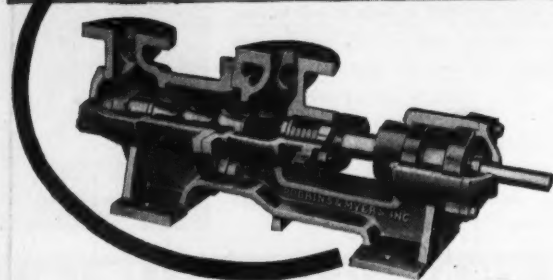


SAVE TIME, SPACE AND COSTS WITH

# A.T. and M.

## CENTRIFUGING

When inquiring specify CP A1938 . . . see information request blank, pgs. 2-3



## "...doing a Very Satisfactory Job"

Since 1940, an R & M Moyno has pumped vitreous enamel into tanks at C. V. Hill and Company, Inc., Trenton, New Jersey, manufacturers of "Hill" refrigerators and market equipment—and it's "doing a very satisfactory job."

Moyno pumps have no cylinders to score, no pistons, no valves or other small openings to restrict flow and impose high fluid velocity. Moynos use no portion of the housing as sealing surface, have no end-seal whatever. These remarkable pumps deliver positive pressure without pulsation, and they handle practically everything that will flow through a pipe.

The single moving part—a rotor revolving within a stator—seals with rolling contact; pumps virtually without turbulence for low upkeep and long life even under "impossible" conditions of abrasion, viscosity, and suspended solids.

No other pump is like the Moyno. Send for literature. Representatives in principal cities.



**The Durable R & M  
MOYNO PUMP**

**ROBBINS & MYERS • INC.**  
MOYNO PUMP DIVISION • SPRINGFIELD, OHIO  
HOISTS & CRANES • MACHINE DRIVES • MOTORS • FANS • FOUNDED 1878

When inquiring specify CP A1030 — see information request blank, pgs. 2-3

## PRODUCTION

### Broad-Range Connector Tool

*Uniquely stepped impression die and adjustable holding die indent large, small connectors*

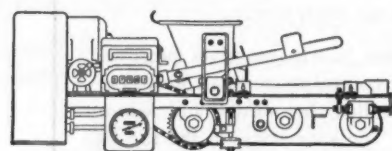


CABLE CONNECTOR TOOL

**Uses** — For installing both copper and aluminum "Hydent" electrical connectors on large cables. May be used on connectors for commercial cable sizes No. 8 to 250 Mcm. Also on flexible, extra flexible and welding cable sizes

No. 8-4/0. Suitable for general factory maintenance work. **Features** — Adaptable to an exceptionally large number of sizes and types of connectors. Single stepped impression die makes tool entirely self-contained. Adjustable holding die accommodates entire range of connectors for which tool is designed. Has high mechanical advantage.

**Description** — The holding die adjustment is made by thumb screw, and each setting is determined by the graduated scale on the head of the tool. Tools of such range usually require removable dies. The combination of uniquely stepped impression die and adjustable holder die makes these unnecessary. When set for small sizes, indent is formed only by smaller diameter portion of die. Larger portion is brought into play for larger sizes and the design



### HARDINGE WEIGHT RECORDING FEEDERS

1—Record the weight fed by:

- (a) Printed card — both cumulative and batch.
- (b) Recording chart — a month's record on one roll.
- (c) Visual dial reading in pounds or tons.

2—Have remote control.

- (a) Rate changed from push button station.
- (b) Recording attachments located in control room.

3—Designed to suit your requirements.

- (a) Two or more feeders interlocked.
- (b) Metal belts for high temperature.
- (c) Magnetic pulley to remove iron.

Write for Bulletin 43.

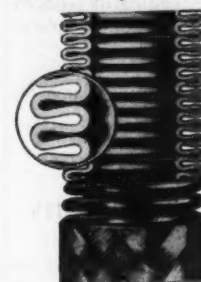
**HARDINGE**  
COMPANY, INCORPORATED • YORK, PENNSYLVANIA  
NEW YORK, CHICAGO, SAN FRANCISCO, TORONTO

When inquiring specify CP A1040 — see information request blank, pgs. 2-3

## No Seepage...

### WITH REX-WELD ON THE JOB!

REX-WELD Flexible Metal Hose is absolutely tight for conveying steam, gases, oils and various types of searching fluids. It eliminates dangerous, wasteful leakage—types are available which effectively resist the corrosive action of the material being conducted. To do a better job, more economically—use Rex-Weld!



- Available in bronze and steel, annular or helical corrugations.
- Unbraided or braided—depending on working conditions.
- Sizes from 3/16" to 4" I.D. (incl.)
- Successfully withstands temperatures to 1000° F. and burst pressures to 11,000 p.s.i.—depending on size.
- REX-TITE mechanical couplings are easy to install—reattachable.

Find out how durable, versatile REX-WELD can solve your flexible metal hose problems. Write today for Booklet E-144.



Flexible Metal Hose for Every Industrial Use

**CHICAGO METAL HOSE CORPORATION**  
MAYWOOD, ILLINOIS

Plants: Maywood and Elgin, Ill.

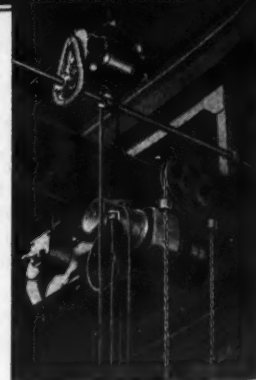
When inquiring specify CP A1041 — see information request blank, pgs. 2-3

## MOTOR TRAVEL for Hand Traveled Crane Bridges THE Northern "TRAVELATOR"

Less than half a day required for application—no dismantling of crane—any good mechanic can apply the Northern "Travelator."

It provides pendant push button controlled electric power travel for hand traveled bridges within the range of 10 tons capacity.

The "Travelator" is an inexpensive, thoroughly effective durable device



**Northern**

WRITE FOR BULLETIN 5

**ENGINEERING WORKS**

2645 Atwater Street, Detroit, Michigan  
Offices in Principal Cities

Northern Crane & Hoist Works Limited, Windsor, Canada

When inquiring specify CP A1042 — see information request blank, pgs. 2-3



## PRODUCTION

provides for proper flow of metal. Weight of tool 6½ lbs. Made of high strength steels. Additional information on "Hytool MY28" on request.

BURNDY ENGINEERING CO., Dept. CP, 107 Bruckner Blvd., New York 54, N. Y.

When Inquiring specify CP A1945 — see information request blank, pgs. 2-3

## Printed Cellophane Tape

*Transparent, touch-sealing; available to users engaged directly or indirectly in war industry without priority*

**Uses** — Suitable for a wide range of applications requiring transparent tape of high tensile strength.

**Description** — Instructions, identification data, trademarks, etc. are printed in black only. This is a new line of "Filmonize," cellophane tape and is available to users engaged directly or indirectly in a war industry without priority. Minimum order of 9 rolls (or quantities in 9 roll multiples). Type matter that tape is to bear can be printed on one line on tape ½" x 2592", in two lines on ¾" tape, three lines on 1" tape, both also in total lengths of 2592". Label may be either 1", 1½", 2", 3" or 4" in length including space for tear off between labels. Rolls fit standard dispensers.

INTERNATIONAL PLASTIC CORPORATION, Dept. CP, 10 Park Place, Morristown, N. J.

When Inquiring specify CP A1946 — see information request blank, pgs. 2-3

**SUPERIOR  
PROCESSING  
FASTER  
— at lower costs**

## Dispersing

solids in liquids, solids in solids, or liquids in liquids, PREMIER insures immediate chemical reaction—more finely divided colloidal suspensions.

## Disintegrating

every particle of fiber or cellulose in animal or vegetable tissue... instantly exposes these particles to the extractive action of the suspending liquid.

## Emulsifying

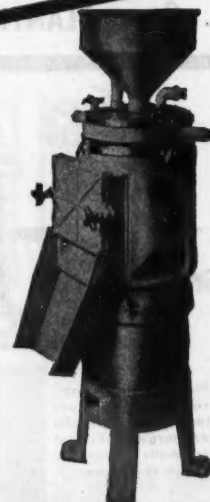
achieving non-separating emulsions with plunit ratings as low as ½.

## Homogenizing

assuring superior homogenized products by compelling uniform distribution of fat globules throughout the mix.

## SIMPLEST ROTOR-STATOR

Easy to {  
CLEAN  
OPERATE  
ADJUST

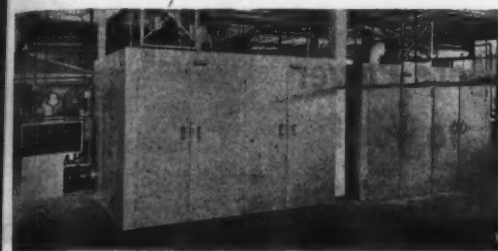


Write for this important brochure on superior processing describing the complete line of PREMIER COLLOID MILLS. Hourly capacities from 10 to 5000 gallons.

## PREMIER MILL CORPORATION

Laboratory and Plant: Geneva, New York  
General Sales Office: 110 E. 42d St., New York 17, N. Y.  
Canadian Agents: 454 King Street W., Toronto, Ont.

When Inquiring specify CP A1948 — see information request blank, pgs. 2-3



## KIRK AND BLUM

## Industrial Ovens

### ASSURE FASTER AND BETTER PRODUCT FINISHING

Increased rate of production, better finishing jobs in less time with maximum safety, conservation of fuel and manpower... these are among important results being achieved right now by Kirk & Blum Industrial Ovens. Whatever your particular problem, Kirk & Blum Engineers are prepared to design and install a baking or drying system. GUARANTEED to turn out superior product finishing... at lower cost.

Send for Booklet: "Industrial Ovens"

## The KIRK & BLUM Manufacturing Co.

An Organization of Engineers and Mechanics  
2833 SPRING GROVE AVE. CINCINNATI 25, OHIO

When Inquiring specify CP A1943 — see information request blank, pgs. 2-3

**NOW! FUNGICIDE-TREATED!**

MYSTIK Self-Stik CLOTH TAPE now is fungicide-treated to bring one more vital protection to products which are MYSTIK-sealed. This new feature has been developed as a result of the many war material shipments destroyed by fungus, especially in the Pacific theater. All components of MYSTIK Tape—adhesive, cloth and waterproof backing—are impregnated with a powerful fungicide. Give your shipments this added protection now! Ask your distributor or write for details.

**FREE**—Write for free sample roll of new fungicide-treated MYSTIK Self-Stik Tape. Mystik Adhesive Products, 2629 North Kildare Avenue, Chicago 39, Illinois.

## MYSTIK Self-Stik CLOTH TAPE

When Inquiring specify CP A1944 — see information request blank, pgs. 2-3

MAY-JUNE, 1945

## EDMONT POINTS TO EXTRA LONG WEAR!

### LOOK FOR THE FABRIC LINING

Edmont gives  
you this  
DOUBLE  
PROTECTION

**Edmont Coated Fabric**  
Gloves outwear ordinary rubber gloves many times, according to reports from every type of industry

They give longer, better protection because they're doubly reinforced—a thick coating of rubber thoroughly bonded to a tough, sturdy fabric. Seams are tightly sealed against wear. No snag or tear. Thanks to new developments in American-made rubber, they're more resistant to oils, grease, chemicals, caustics and all harsh, abrasive materials.

Knit wrist and gauntlet styles. Men's and women's sizes. Available through leading distributors, or write direct for full information.

## Fabric-Lined

Edmont 501 Orange Street Coshocton, Ohio RUBBER GLOVES

When Inquiring specify CP A1947 — see information request blank, pgs. 2-3

# DUST

## THE BREEDER OF ABSENTEEISM



# Parsons VAL BAG

## DUST ARRESTORS

### CHANGE the PICTURE

Statistics prove that back of most absenteeism in plants is sickness and back of most of the sickness is factory dust and dirt. Proper dust control and that means Parsons Oval Bag dust arrestors, will instantly cure most of the present day absenteeism and along with that increase your production beyond present peak. Parsons Oval Bag dust arrestors, modern in every respect and exclusive features afford not only employee protection for plant equipment and buildings. Why not call in a Parsons engineer to check into your dust problem, no obligation whatever. Write and we will be glad to send you a copy of our dust control bulletin "Mastery of the Air," it's free.

**PARSONS ENGINEERING CORP.**  
2545 EAST 79th STREET • CLEVELAND, O.

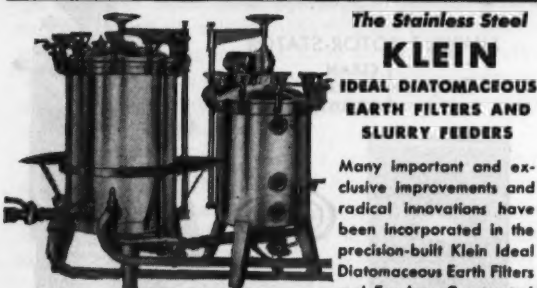
When inquiring specify CP A1040 — see information request blank, pgs. 2-3

## INDUSTRIAL PLANTS CHEMICAL PLANTS FOOD PLANTS ..Your PLANT!

# THERE IS NO OTHER

# Filter

## LIKE THIS



Illustrated are the radically different Klein Ideal Filter Units with discharge tubes that practically eliminate the danger of clogging.



**The Stainless Steel KLEIN**  
**IDEAL DIATOMACEOUS EARTH FILTERS AND SLURRY FEEDERS**

Many important and exclusive improvements and radical innovations have been incorporated in the precision-built Klein Ideal Diatomaceous Earth Filters and Feeders. Constructed of stainless-steel they utilize a new exclusive filter principle that will bring you a new high in maximum efficiency, minimum maintenance and product uniformity.

WRITE TODAY for full information and the latest Klein Bulletin.

ESTABLISHED 1909

# KLEIN

FILTER & MANUFACTURING COMPANY  
1225 29 SCHOOL STREET • CHICAGO 13, ILLINOIS

When inquiring specify CP A1050 — see information request blank, pgs. 2-3

## PRODUCTION

### Drum and Barrel Up-Ending Truck

Safe, rapid one man handling of loads to 900 lbs.



Lowering truck tongue to complete drum up-ending operation

by one worker even when of small stature.

**Features** — Protection of workers and conservation of man power, some of the up-ending operations performed often requiring several men.

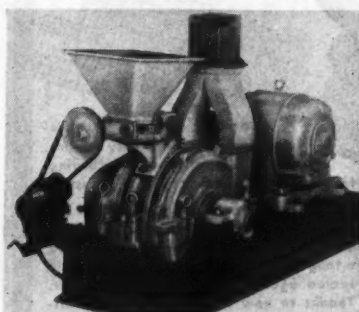
**Description** — The truck is easily pushed up to drum so that jointed extensions are in place under it. The two hand handle and a foot rest at base of truck tongue make it easy to perform the required operation. This action permits the jointed extension members to aid in turning drum up on end. The barrel truck is of streamlined design, tubular construction and featuring precision weight distribution. The weight is carried over the sturdy rubber tired wheels. Instant adjustability permits handling drums and barrels of various sizes.

THE COLSON CORP., Dept. CP, Elyria, Ohio.

When inquiring specify CP A1951 — see information request blank, pgs. 2-3

### Mechanical Screenless Pulverizer For Powders of 1 - 25 Microns

Compact unit employs simple principle, design provides cooler operation



ATOMIZER for mass production

former equipment. Units are very compact and unusually accessible. The entire mill housing is split into two halves, the upper half swinging easily on substantial hinges. Stainless steel construction eliminates corrosion.

**Description** — Principle of operation is simple. The raw material is fed into the mill from the customary hopper. After its initial breaking down by the rotating hammers, it is atomized by an air stream which carries the dispersed particles into separator wheels, where they are whirled about at a rate of from 4000 to 7000 rpm. A fan adjacent to the separator wheel exerts just enough suction to

**Uses** — For the production of extra fine powders from 1 to 25 microns.

**Features** — Permits assured performance to particle sizes as low as 1 to 2 microns on certain materials. In addition it provides cooler operation than was possible with

### More Power to You!

Greater earnings for you too — because the new Cleveland Speedaire Worm Gear Unit gives you *More Horsepower for Your Dollar!*

Speedaire offers as much as twice the capacity of standard worm units of equal frame size, when operated at usual motor speeds.

Heat generated during operation is literally *scooped off* the deeply-finned outer surfaces of the oil reservoir by a high-velocity air stream.

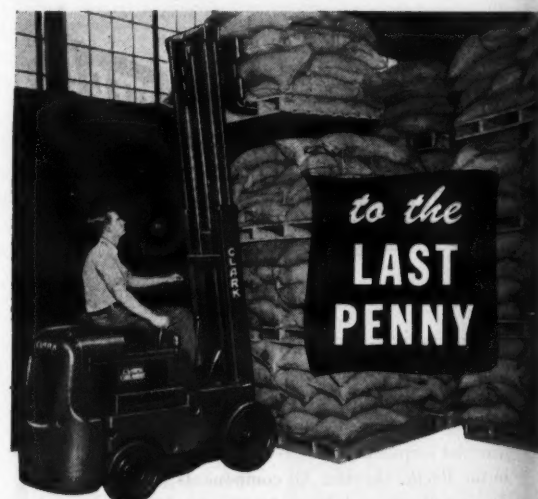
The new Speedaire Catalog is ready. We'll send it gladly. The Cleveland Worm & Gear Company, 3257 East 80th Street, Cleveland 4, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication  
In Canada: PEACOCK BROTHERS LIMITED



**Cleveland SPEEDAIRE**  
FAN COOLED Worm Gear Reduction Units

When inquiring specify CP A1952 — see information request blank, pgs. 2-3



to the  
**LAST PENNY**

Make every square foot of space *earn more* — make every movement of material *cost less* use **CLARK fork trucks**

**CLARK TRUCTRATOR**  
BATTLE CREEK, MICHIGAN, U.S.A.

When inquiring specify CP A1953 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## PRODUCTION

draw out the finest particles and discharge them. But, the centrifugal force imparted by the separator wheel so increases the gravitational weight of the coarser particles that they resist the pull of the fan, and drop back into the path of the hammers where they are beaten and rebated until they are fine enough to yield to the pull of the fan. This pull, or aerodynamic drag, in opposition to centrifugal force, is the underlying principle in the design of the "Mikro-Atomizer." The relationship between the radius and width of the separator wheels (centrifugal force) and the radius and width of the fan blades (aerodynamic drag) determines the fineness and the capacity of the machine on any given material. Performance data on a few characteristically different materials indicates the following results as to average and maximum particle sizes in microns, also as measured by 325 mesh U. S. standard test screen, and pounds per hour horsepower capacity: Titanium dioxide — average microns 2, maximum microns 5, % thru 325 screen 100, pounds hp-hr 30; aluminum hydroxide, average microns 5, maximum microns 10, % thru 325 screen 100, pounds hp-hr 5; carbon black (pellets) average microns 7, maximum microns 20, % thru 325 screen 100, pounds hp-hr 36. (Unit cited operates at 10-20 HP). A typical installation is shown in picture on cover. No air filter is required in this instance. The two 10" x 6 feet cyclone collectors are special. Air Filter may be installed on roof if desired. Descriptive bulletin on request.

PULVERIZING MACHINERY CO., Dept. CP, Chatham Rd., Summit, N. J.

When inquiring specify CP A1954 — see information request blank, pgs. 2-3

## Chromate Impregnated Felt Gasket

Useful in flange-to-flange joints in sprinkling, plumbing, fuel oil systems; also for air lock and refrigerator doors



GASKET placed on one flange of joint

**Uses** — Originally intended as substitute for low pressure rubber gaskets in marine ventilating systems, its features have prompted its use as joint seals in water, fuel oil and diesel oil systems as well as gasketing for air lock and refrigerator doors and also flange-to-flange joints in drainage, fire main, fresh water, sprinkling and plumbing systems.

**Features** — Fire and flame resistant and withstands long exposure to salt water without decomposition.

**Description** — Gasket consists of felt base, impregnated with a chromate pigmented compound which is non-drying, tack and water insoluble and renders the felt flexible and pressure resistant. Gaskets maintain air pressures up to 25 lbs. psi. Dark green in color and made in 1/8 and 1/16 in. thicknesses. Factory pre-cut or cut from sheets at point of use without special tools.

SHERWIN-WILLIAMS CO., Dept. CP, 101 Prospect Ave., N.W. Cleveland, Ohio.

When inquiring specify CP A1955 — see information request blank, pgs. 2-3

MAY-JUNE, 1945

*Here is a noteworthy fact*

*— and here's the reason behind it*

## GATES Synthetic Rubber V-Belts

— are **TODAY** delivering **BETTER SERVICE** than **Pre-War** Belts of **NATURAL RUBBER!**

Every day, on battlefields all over the world, U. S. Army tanks, tractors and self-propelled big guns are giving Gates V-belts a severity of service that no belts built before the war could possibly stand. Gates developed these combat-unit V-belts through specialized research and is building them entirely of synthetic rubber!

The importance of this fact to industrial V-belt users is this—

● Every improvement developed by Gates for these Army V-belts has also been added, day by day, to the quality of the standard Gates Vulco Ropes which have been delivered to you.

In many other products, as you know, war-time improvements must be withheld from general use until after the war is won. Gates V-belts are a notable exception to this rule for the simple reason that Victory depends upon production and production depends upon V-belts to drive the producing machines. That is why Gates has been able to give you immediately in your standard Gates Vulco Ropes, every V-belt improvement which Gates specialized research has developed for use on the Army's motorized equipment.

It is because of these facts that the Standard Gates Vulco Ropes you are now getting are giving you better service than any V-belts that were ever built before the war.

## THE GATES RUBBER COMPANY

Engineering Offices and Jobber Stocks in All Large Industrial Centers

THE MARK OF



SPECIALIZED RESEARCH

## GATES VULCO ROPE DRIVES

CHICAGO 6, ILL. 549 West Washington. NEW YORK CITY 3, 215-219 Fourth Avenue ATLANTA 3, GA., 738 C. & S. National Bank Bldg. LOS ANGELES 21, CAL., 2240 E. Washington Blvd. DENVER 17, COLO., 999 S. Broadway DETROIT 4, MICH., 8663 Grand River Ave. PORTLAND 9, ORE., 333 N.W. 5th Ave. DALLAS 2, TEXAS, 1710 N. Market St. SAN FRANCISCO 3, CAL. 1090 Bryant St.

—When inquiring specify CP A1956 . . . see information request blank, pgs. 2-3—





## PRODUCTION

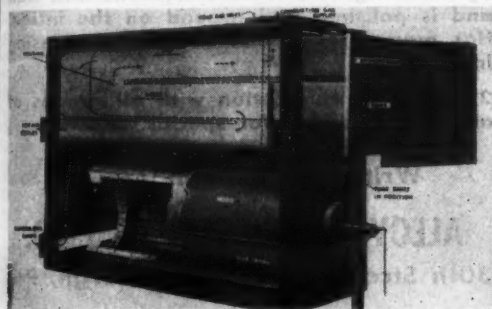
water due to the centrifugal action in the impeller and the scrubbing action of the water curtain which permits turning the clean air to workroom. This type "N" Roto-Clone collector is made in three classes and thirteen sizes for exhaust of 1000 to 25,000 cfm. Bulletin 277 on request.

AMERICAN AIR FILTER CO., INC., Dept. CP, 215 Central Ave., Louisville 8, Ky.

When inquiring specify CP A1961 — see information request blank, pgs. 2-3

### Recirculating Indirect Air Heater

fuel efficiencies of 85% and over; heated air completely separated from products of combustion; air delivery temperature — 600° F.



COMBUSTION CHAMBER, interchanger, outlets, etc.

Uses — Supplies clean, heated air to ovens, dryers.

Features — Provides higher efficiency by recirculating of gases. The burner is the only part that differs with the type of fuel, the heater functioning at top efficiency with either oil or gas. Heaters may be operated as single units or for larger capacities may be grouped in either or both of two unit sizes in which heater is available.

Operation — The arrangement of the parts that make up the heater is clearly shown in the illustration. The steel interchanger is located over the combustion chamber. The air to be heated passes along the outside of the tubes and the combustion gases pass through the tubes. The gases and air travel in counterflow direction with maximum effective temperature differential. The fuel is completely burned in the combustion chamber with a minimum of make-up air, with resultant temperatures of 2000° F. to 2800° F. The hot gases leaving the combustion chamber are then diluted with the cooler recirculated gases brought back from the heater exhaust outlet by means of a fan. The mixture then enters the tube at not more than 1000° F.

Description — Two compact units are built, R-75 — 750,000 BTU per hour output and R-100 — 1,000,000 BTU per hour. A heavily insulated door is provided for access to the heating surface and to the interior of the heater for cleaning and inspection. Interchanger can be easily inspected and cleaned and removed through convenient door. The heated air makes two passes over the tube surface and is conducted to outlet at rear of heater. Outlet temperature range is 500° — 600° F. in present units. Bulletin 137 on request.

J. O. ROSS ENGINEERING CORP., Dept. CP, 350 Madison Ave., New York 17, N. Y.

When inquiring specify CP A1962 — see information request blank, pgs. 2-3

MAY-JUNE, 1945

# RX

## LEAD DUST DANGER ELIMINATED WITH ROTO-CLONE IN PLANT OF STATES BATTERY CO., LOS ANGELES



Installation collects dust at all points of generation — at mixing, plate buffing, breaking (shown above), assembly and burning (shown below), and stripping stations.



General view of one section of plant, showing the No. 12 Type N Class 500 Roto-Clone with capacity of 13,000 cfm.

### TYPE "N" ROTO-CLONE CLEANS BY MEANS OF A WATER CURTAIN WHICH SCRUBS THE AIR . . . .

This installation is a credit to the "know-how" and resourcefulness of AAF engineers and the effectiveness of Roto-Clone dust collecting units. All poisonous and offensive dusts and fumes are removed and workmen no longer need to wear masks and respirators, ordinarily required in storage battery plants. Though lead oxide dust is heavy and adhering, the highest possible collecting efficiency is maintained. Originally designed to handle dangerous magnesium dust, Type N Roto-Clone has no ledges or moving parts where dust can accumulate and obstruct the flow of air. Exhaust hoods are designed to be thoroughly effective, yet are out of the way of all operations. Complete information is available without obligation. Send for bulletin No. 278.



AMERICAN AIR FILTER COMPANY, INC.  
Incorporated

106 Central Avenue, Louisville 8, Kentucky  
In Canada: Darling Brothers, Limited, Montreal, P. Q.

When inquiring specify CP A1963 . . . see information request blank, pgs. 2-3

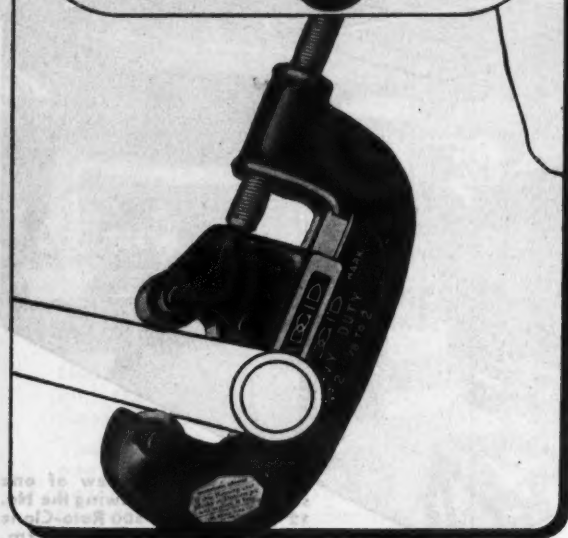
# PIPE CUTTING

with

*Less Effort,  
More Speed*

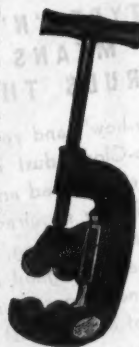
**RIGID**

Thin Blade Cutter



• That unusual thin-blade wheel knives right through pipe, quickly, easily and practically without burr — because it's made of tool-steel, coined from heavy sheet, heat-treated and assembled in its solid hub. In the warp-proof malleable heavy-duty cutter frame it always cuts true, saves you time and effort. Made in 5 sizes for pipe to 6". Order from your Supply House—we're doing our best to supply everybody.

**RIGID** No. 42 and 44 4-wheel Cutter with short handle for cutting in tight places, cuts quickly with quarter turn.



**RIGID**

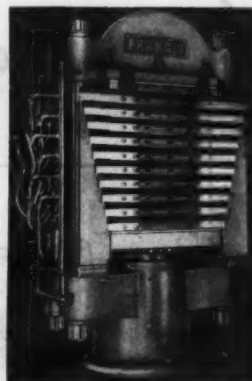
**WORK-SAVER PIPE TOOLS**  
THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U. S. A.

When inquiring specify CP A1964 — see information request blank, pgs. 2-3

## PRODUCTION

### General Purpose Hydraulic Press with 11 Steam Plates

Capacity — 153 tons; automatic pressure and temperature controls



Automatically controlled press makes plastic playing cards

with eleven steam plates. This press can be furnished with 14" or 16" diameter cylinder and with or without pumping unit. Complete information on this unit available on request.

CHARLES E. FRANCIS CO., Dept. CP, Huntington, Ind.

When inquiring specify CP A1965 — see information request blank, pgs. 2-3

### Boron Carbide Mortars & Pestles

*Do not pick up lint, dust, metal particles; pit marks eliminated*

Easily made sterile clean, do not pick up lint or metal particles

constructed with a steel body and is lined with a boron carbide insert, which is ground to the proper shape and then polished to a mirror finish. The pestle has a steel handle with a polished boron carbide rod mounted at one end. Boron carbide is the hardest material made by man. Non-metallic it cannot charge. It will not pick up lint, dust or metal particles to contaminate the material being ground. The mirror surfaces are so smooth that pit marks or surface irregularities are eliminated. These mortars and pestles have been used in large scientific research laboratories for over six months with no signs of wear or contamination in experiments.

NEW ENGLAND CARBIDE TOOL CO., Dept. CP, 60 Brookline St., Cambridge 39, Mass.

When inquiring specify CP A1966 — see information request blank, pgs. 2-3

*Uses* — Developed for service in producing plastic laminated war items, this press is very suitable for general purpose requirements for a wide variety of plastic works. One application of unusual interest is in making plastic playing cards.

*Features* — Extremely sturdy plate support, "V's" for easy loading; strain rod nuts have special locking device to prevent unscrewing.

*Description* — Press illustrated in 30" x 30" x 2". A 153 ton capacity press with motor driven pump unit, automatic pressure and temperature controls, equipped

### STAINLESS STEEL TANK

This stainless steel tank is 42" in diameter by 60" long; has three-sixteenths inch wall and is polished and ground on the inside. Has many uses in the chemical processing industries.

25 years of fabrication with all grades of alloys is available for special work.

Write for Bulletin CP 30

**ALLOY MANUFACTURING CO.**

30th Street

Pittsburgh, Pa.

When inquiring specify CP A1967 — see information request blank, pgs. 2-3



**I WAS CUT IN  
5 SECONDS  
WITH A  
CLIPPER**

*Yes*... YOU CAN CUT SILICA BRICK IN 5 SECONDS WITH A CLIPPER MASONRY SAW

### 'TAILOR-MAKE' SPECIAL SIZES

**THE SPEED  
AND ECONOMY  
IS AMAZING!**

You can easily cut any masonry material with Clipper Masonry Saws... Clay, Concrete, Magnesite, Sillimanite or Acid Resistant Brick.

Write for latest Catalog.

**CLIPPER MANUFACTURING CO.**  
4004 MANCHESTER ST. LOUIS, MO.

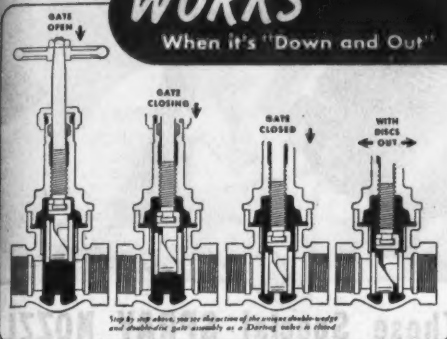
When inquiring specify CP A1968 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## WORKS

When it's "Down and Out"



Top to bottom, see the action of the unique double wedge and double disc gate assembly as a Darling valve is closed.

THERE'S nothing hard about making a valve. The bung in a barrel, the spigot in a wine keg, the ball in a flue—they are all valves of a sort. The trick is to make a good one.

The Darling fully revolving double disc, parallel seat gate valve embodies a unique design that insures tight closing, easy operation and long life.

The Darling gate consists of only four parts, two discs, two wedges. In closing the Darling valve, the gate is lowered into the body until the discs are opposite the seats. There is no forcing to wear or gall seats and discs.

When the lower wedge contacts the bridge in the bottom of the body, the wedges begin to spread, and the discs are forced out against the valve seats. There is no tearing of metal against metal; discs simply go "down and out". They fit tightly. They wear evenly. They last for years. The valve is always easy to operate.

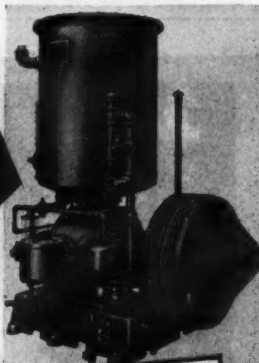
We'll be glad to give you complete information about Darling valves, or send you our 300-page, illustrated Catalog No. 17.



**DARLING VALVE & MANUFACTURING CO.**  
WILLIAMSPORT, PA.

When inquiring specify CP A1969 — see information request blank, pgs. 2-3

"MUST" IN YOUR HIGH VACUUM PROCESSES



**BEACH-RUSS High Vacuum PUMPS**

Write for Catalog No. 80.

Type RP Pumps are built for wet or dry vacuum in capacities from 15 to 750 c.f.m., complete with automatic lubricating, water-oil separation and cooling systems.

Write for Catalog No. 80

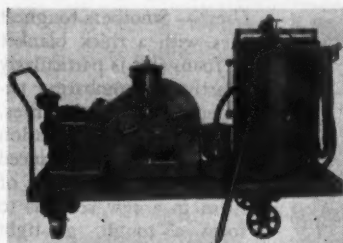
**BEACH-RUSS COMPANY**

46 CHURCH STREET NEW YORK 7, N. Y.

## PRODUCTION

### Air Tool Removes Wash Residue

Mobile vacuum unit with hose and suction tool may be used to remove solutions from metal, wood boxes, barrels, containers



PUMP engine and tank on truck

at one time. The tank is provided with a glass gauge which indicates quantity of residue accumulated in tank. **Description** — The complete unit consists of a rotary vacuum pump which creates not only a high degree of vacuum but a sufficient volume of air to provide the necessary power to remove instantly liquid residue. Pump is driven by electric motor or gasoline engine (as illustrated). The pump is automatically lubricated and a relief valve regulates the degree of vacuum to be used. Rubber hose and special suction tool is included.

LEIMAN BROS., Dept. CP, 179 Christie St., Newark 5, N. J.

When inquiring specify CP A1971 — see information request blank, pgs. 2-3

## SPEED? RIGHT!

... SPEED in reaching the desired temperature ... in recovery after loading ... and in handling the work.

## ACCURACY? RIGHT!

... ACCURACY in holding temperatures within predetermined limits ... in every part of the oven ... automatically.

## KOCH SHELF TYPE CABINET OVENS

Controlled crossflow recirculation brings you the SPEED AND ACCURACY that means faster, more uniform drying, curing or baking.

For complete information, send for Bulletin DB 40 — no obligation.

**KOCH**  
SONS, INC.  
INDUSTRIAL EQUIPMENT



When inquiring specify CP A1972 — see information request blank, pgs. 2-3

## HIGH Production UNITS

### UNION SPECIAL CLASS 20500

#### Heavy Duty Bag Closers

A good investment for any plant where 100 lb. and larger filled cotton, jute or paper bags are closed. An adjustable sewing head mounting accommodates different sizes of bags. Unit has power driven, horizontal conveyor, inclined conveyor, or both; or conveyor transmission only, for plant production line. Three control systems available, including single pedal control of conveyor drive and sewing head. Write for Union Special Bulletin No. 200, describing the complete line of Union Special bag closers, sewing heads, stitch types, methods of closure, variety of installations and other useful information.

**Union Special Machine Company**  
442 N. Franklin Street Chicago 10, Illinois

**Union Special**  
BAG CLOSING MACHINES

When inquiring specify CP A1973 — see information request blank, pgs. 2-3

When inquiring specify CP A1970 — see information request blank, pgs. 2-3

MAY-JUNE, 1945

Page 65

SHADOWGRAPH weighing and packaging 355 Defender Photo Supply Products—Rochester, N.Y.



## For Small Packages of High Accuracy

Packaging in ounces, grams or grains need not be a slow time-consuming operation, not if you use EXACT WEIGHT Shadowgraphs. This scale can be furnished in unbelievable sensitivity, yet retain high speed operation. Designed for small packaging of high value chemical products this electrically operated unit is expressly built for your task. Write for complete details.

# INDUSTRIAL PRECISION

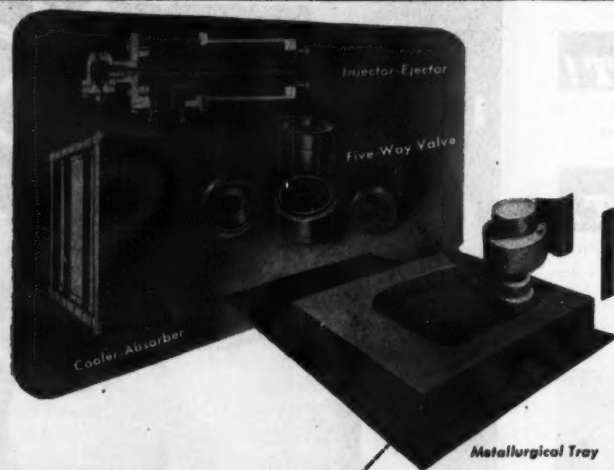
## Exact Weight Scales

THE EXACT WEIGHT SCALE COMPANY

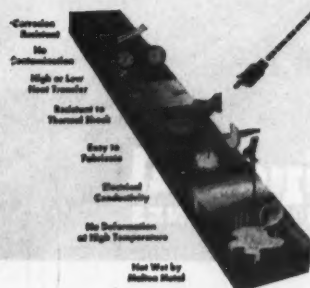
31 W. Fifth Ave., Columbus 8, Ohio

Dept. E, 783 Yonge St., Toronto, Canada

When inquiring specify CP A1974 — see information request blank, pgs. 2-3



**BAR OF WHAT?**  
Carbon, Graphite or "Karbate" materials of course!



# IT'S EASY TO FABRICATE

SINCE carbon and graphite and "Karbate" materials\* are readily formed and machined into intricate shapes with precise dimensions, they are easily fabricated into equipment and structures of utmost utility for the metals, chemical, mechanical and other industries.

Examples are the injector-ejector, cooler-absorber, and five-way valve illustrated . . . each built of accurately finished pieces and each having the combination of properties for its job possessed by no other materials. In the metals industries, applications run from the metallurgical tray shown to durable furnace linings easily built of fitted carbon blocks. A broad line of processing equipment—standardized or to your design—meets exacting demands of the chemical industries . . .

For detailed information on these and many other applications of "National" carbon and graphite and "Karbate" formed or fabricated products, write to our nearest division office for Catalog Section M-8000-A.

\*Impervious carbon or graphite

The words "National" and "Karbate" are registered trade-marks of National Carbon Company, Inc.

**NATIONAL CARBON COMPANY, INC.**

Unit of Union Carbide and Carbon Corporation

UCC

General Offices: 30 East 42nd Street, New York 17, N.Y.

Division Sales Offices: Atlanta, Chicago, Dallas, Kansas City, New York, Pittsburgh, San Francisco

When inquiring specify CP A1975 . . . see information request blank, pgs. 2-3

## PRODUCTION

### Soy Bean Foam Smothers Fires

Liquid made from soy beans forms clinging blanket; now in use by Navy; many post-war applications foreseen



"Whipped Cream" foam smothers fire

clings to vertical surfaces as well as flat areas.

**Description** — Practically all "Aerofoam" has gone for war requirements for protection of ships and dock areas. When the liquid is mixed with salt or fresh water and air by means of special nozzles, a thick clinging blanket of foam gushes out to snuff out fires and prevent flashbacks. A harbor fire in New York, involving collision in which several tankers were aflame has recently demonstrated the effectiveness of this foam. More than four million gallons have been produced to date. The special liquid pro-

**Uses** — Smothers toughest fires with a thick blanket of foam and is particularly effective in combating petroleum and chemical fires. **Features** — A five gallon can of liquid produced nearly 900 gallons of foam in a few seconds to form a tough, gas-tight blanket which cuts off oxygen and snuffs out flame. "Aerofoam" as shown in the picture here and in larger size in the cover illustration flows freely, yet



## These Special SPRAY NOZZLES Make Hard Jobs Easy

The hard rubber atomizing nozzle shown here is just one of many Spraying Systems products designed especially for corrosive liquids. Also available are nozzles of other materials such as brass, steel, stainless steel, and Stellite for practically every process application. All embody Spraying Systems design features that assure accurate volumetric control and the exact spray characteristics desired.

Complete facts and figures on Spraying Systems nozzles and accessories are in Catalog No. 22. Write for your free copy today.

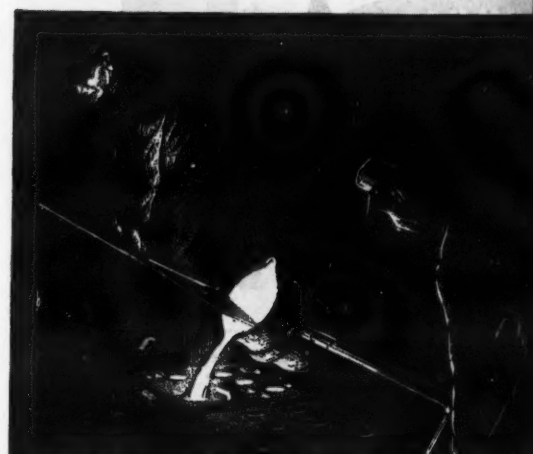
**SPRAYING SYSTEMS COMPANY**

4037 West Lake Street

Chicago 24, Illinois

**SPECIALISTS IN THE DESIGN AND MANUFACTURE OF SPRAY NOZZLES**

When inquiring specify CP A1976 — see information request blank, pgs. 2-4



## STAINLESS STEEL CASTINGS

Are you using stainless steel forgings or fabricated parts which might conceivably be cast—with consequent savings in cost, man-hours and delivery time? If so, the chances are we can help you.

Using either the static or centrifugal method—which ever is better for a particular job—we are able to produce many parts previously considered impossible to cast.

Write for complete information. Tell us what your problem is and give us a chance to help you solve it.

**THE Cooper ALLOY FOUNDRY CO.**  
150 BLOY STREET • HILLSIDE, NEW JERSEY

When inquiring specify CP A1977 — see information request blank, pgs. 2-4

CHEMICAL PREVIEW



## PRODUCTION

ing this foam is made from soy beans. Various post-war applications by municipal and industrial fire departments are foreseen.

NATIONAL FOAM SYSTEM INC., Dept. CP, 1400  
Baker Bldg., Philadelphia 2, Pa.

When inquiring specify CP A1978 — see information request blank, pgs. 2-3

## Asbestos Fabrics for Clothing, Mechanical Goods Applications

*Available in selection to meet varying needs in  
production of laminated phenolic products  
and other uses*

Uses — These "Asbestos" fabrics may be used as tarpaulins, in insulation applications, fabricating mechanical goods for laminated phenolic products and for protective clothing.

Features — Lightweight, flame resistant, water repellent, durable, high tensile strength.

Description — Some of the standard fabrics now in regular production include: Asbestos 1800 — a thin, open weave asbestos cloth, weight 8 oz. per sq. yd., 1801 — thin closely woven asbestos cloth suitable for applications in electrical insulation field, 1802, closely woven cloth for use in connection with mechanical goods, 1803, cloth of broken twill for fabricating mechanical goods and in laminated phenolic products and protective clothing. 1804 is similar to 1803 but has been subjected to sueding process.

BURCOTT MILLS, Dept. CP, 616 W. Fulton St., Chicago 6, Ill.

When inquiring specify CP A1979 — see information request blank, pgs. 2-3

## Cork Filled Tape Stops Drips

*Easily applied to form a snug, sealed jacket around  
pipes; tape can be painted if desired*



PIPE TAPE easily applied

This pliable, cork-filled tape forms a snug, sealed jacket around pipes. Fittings, valves, etc. may be completely covered. The tape is very suitable for use on pipes one inch in diameter and smaller. The tape comes in a rich brown color but it may be painted if desired. It requires no maintenance and lasts indefinitely. It is easily wound to conform to shape of elbows, angles, unions, tees, and various pipe assemblies. A circular on "NoDrip" tape will be sent on request.

W. MORTELL CO., Dept. CP, Kankakee, Ill.

When inquiring specify CP A1980 — see information request blank, pgs. 2-3

# How to Select a Screw Conveyor (If that's what you need)

Screw conveyors offer many advantages in handling bulk materials. They are efficient in power, space, and maintenance requirements; first cost is relatively low. They permit the use of dust and moisture-proof enclosures. They can be used alone or with other types of conveyors.

But to secure maximum efficiency, first be sure a screw conveyor is the type you should have; second, be sure you select the right *kind, design, and size* of screw conveyor.

To be sure on both points, consult a Link-Belt Materials Handling Engineer. His broad experience, and knowledge of all types of equipment will be helpful. And he can give you unbiased advice, because Link-Belt makes a wide variety of conveyors.

## LINK-BELT COMPANY

Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta, Dallas 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8. Offices, Factory Branch Stores and Distributors in Principal Cities.



A great deal of information on screw conveyors is available in Data Book 1289. Diagrams, tables, illustrations—128 pages. Send for a copy today.

### HELICOID

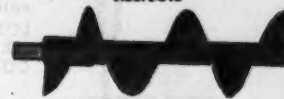
Continuous rolled flights, one piece, secured to shaft by welding and formed steel reinforcing lugs. Large pipe gives greater torque; no laps or rivets to catch dirt, or to wear out. Tapered cross section for greater strength.



HELICOID

### SECTIONAL FLIGHT

Individual flights riveted together, secured to pipe or shaft with forged steel lugs. Easy to repair by renewing sections; costs less to make special sizes, types, materials.



SECTIONAL FLIGHT

### RIBBON

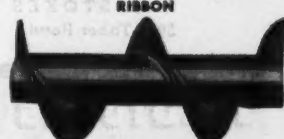
For sticky materials such as molasses, raw sugar, hot tar, asphalt, etc. Available with beveled or straight edges, helicoid or sectional flights, single, or multiple ribbon for mixing action.



RIBBON

### FOR ABRASIVE MATERIAL

Conveyor flights of special abrasion resisting metals are available; or sectional flights cast in iron, alloys and steel. Case hardening or stellite treatment if needed.



STAINLESS STEEL



CAST FLIGHTS



DOUBLE FLIGHT

### CORROSION AND HEAT RESISTANCE

Corrosion resisting materials such as aluminum, bronze, copper, monel, stainless steel and others can be used when available and when justified. Heat resistant alloys or extra heavy flights are available for high temperature applications.



MIXING PADDLES

### FOR MIXING

Multiple ribbons or paddles in various designs can be used as continuous or batch mixers for light or heavy materials, dry, damp, or wet.

### FOR LIFTING

Helicoid Rotor Lift, with special flighting, hung from top thrust bearing, in dust-tight steel housing.

**LINK-BELT SCREW CONVEYORS**  
COLLARS · COUPLINGS · HANGERS · TROUGHS · BOX ENDS · FLANGES · THRUSTS · DRIVES

When inquiring specify CP A1981 . . . see information request blank, pgs. 2-3

## For Highest Quality Water STOKES ELECTRIC STILLS

with  
**Automatic  
Overheat-Protection**



**CONTINUOUS DISCHARGE OF IMPURITIES.**  
**TRIPLE VAPOR BAFFLES** prevent entrainment.  
**LONG-LIFE, NON-CORROSIVE METAL AND PYREX GLASS CONSTRUCTION.**

**ECONOMICAL OF CURRENT AND WATER.** Large Boiling Area and Counterflow Condenser.

**MORE THAN 20,000 IN USE IN EXACTING SERVICE.**

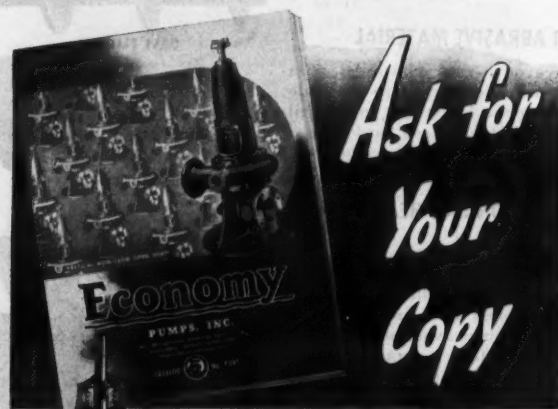
**SIX SIZES**  
from 1/4 to 1 1/2 g.p.h.  
Also Gas and Steam  
Heated Stills from 1/4 to  
100 g.p.h.

**F. J. STOKES MACHINE CO.**  
5974 Tabor Road Philadelphia 20, Pa.

**F.J.Stokes** WATER STILL



When inquiring specify CP A1982 — see information request blank, pgs. 2-3



**Featuring the Newest Designs...  
Complete Selection Tables of  
VERTICAL NON-CLOG PUMPS!**

Here's your answer to the problem of pumping liquids containing solids, etc. Catalog F-245 fresh off the press presents the last word in Non-Clog construction—backed by over 30 years specialized experience, precision manufacture and modern production practice. Selection tables simplify the choice of exact types and sizes to handle your requirements. A copy of the Catalog is yours for the asking. So are the services of our engineering staff.

Cross Section view of Type SVV Pump showing Adjusting Nut for taking up Impeller wear, Bronze Removable Shock Absorber and other exclusive features described in Cat. F-245.

**ECONOMY  
PUMPS, INC.**  
HAMILTON, OHIO

Send Economy Cat. F-245 without obligation to:  
NAME..... TITLE.....  
FIRM.....  
ADDRESS.....

When inquiring specify CP A1983 — see information request blank, pgs. 2-3

## PRODUCTION

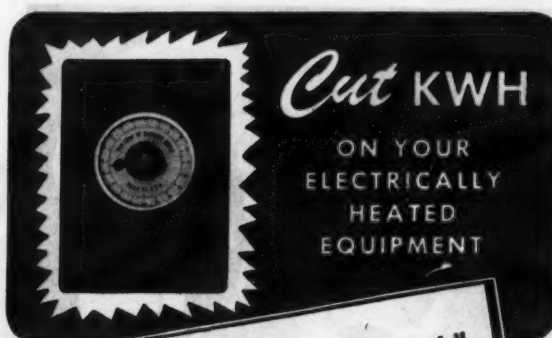
### Sodium Tetrphosphate Beads for Concentrated Stock Solutions

*Glasslike beads easily handled; no dusty fines;  
detergent, water conditioner, dispersing agent*

**Uses** — Stock solutions made with this product may be used for operations requiring rapid diffusion of the phosphate throughout the process water; quick accurate control of quantity used; for liquid dispensing systems of the pump gravity type; and for manual or automatic proportioning equipment in continuous processes. The many applications of this product are in such fields as textile and food. It serves as a detergent, water conditioner, dispersing agent and dye assistant.

**Features** — The new bead form in which it is now available in addition to original granular type is very rapidly soluble and contains no dusty fines.

**Description** — Bearing the name "Quadafos," this product (Sodium Tetrphosphate —  $\text{Na}_4\text{P}_2\text{O}_7$ ) is now offered in bead form to extend its use to industries best served by readily prepared, concentrated stock solutions. The beads are smoothly rounded spheroids of brilliantly clear glass-like structure, attractive in appearance, safe and easy to handle in preparing stock solutions; flowing freely, not packing or sticking. A convenient method of dissolving "Quadafos" beads when purchased in bulk utilizes a standard 55 gallon drum (23" O.D. x 35") — 400 lbs. of water, 100 lbs. of beads, a wire basket, minimum mesh 10 per inch. The beads dissolve in cold water without agitation or attention. The water warms slightly as dissolving proceeds and circulation is provided by sink-



**NEW** Input Controllers break the full current input at regular intervals so that power is "On" for an exact portion of each minute. Desired temperatures are held closely—and, at lowest cost. Power is conserved by using all of the current for heating. NEW Series 4600 Input Controllers include proven industrial design features in keeping with today's needs for accuracy, appearance and reliability. If you're using electric heat, you should have our new Bulletin T-49 which covers all data on this instrument. Write today!

**Automatic Temperature Control Co.**  
Logan St. & Germantown Ave.  
Philadelphia 44, Pa.

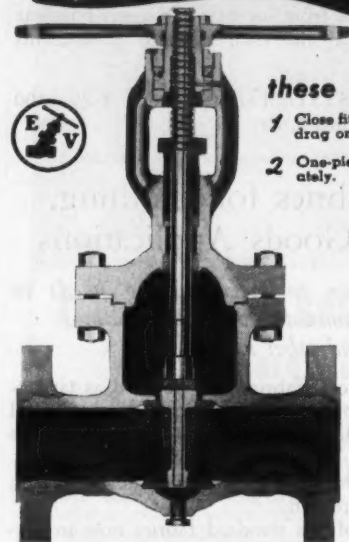
When inquiring specify CP A1984 — see information request blank, pgs. 2-3

## New GATE VALVE design

with  
**these FEATURES:**

- 1 Close fitting guide ribs prevent wedge drag on seating faces.
- 2 One-piece bonnet aligns stem accurately.
- 3 Special testing procedure tests both seating faces simultaneously, assures two tight seating faces.
- 4 Ball bearing yoke even in medium sizes.
- 5 Uniform metal sections reduce distortion in heating and cooling.
- 6 Integral but replaceable hard surfaced seats. Built in sizes 2 1/2 to 12 in. for service from 150 to 3600 lb.

**Write for New Catalog**  
12-E with full details of new, basically different Edward guiding method and complete dimensions.



**THE EDWARD VALVE & MFG. CO., INC.**  
EAST CHICAGO, INDIANA

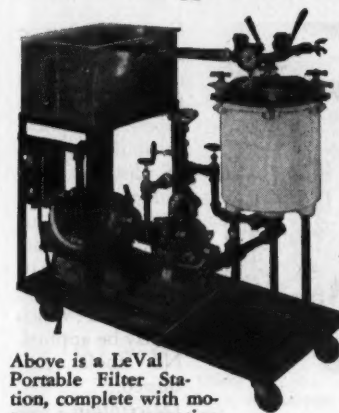
**Edward Valves**  
*Forged Steel & Cast Steel*

When inquiring specify CP A1985 — see information request blank, pgs. 2-3

## NO BREAK-THRU

**When you filter through stone!**

LeVal Filters support filter-aid on rigid, porous stone. They have no cloths or pads to break through... or to sag and let cloudy filtrate pass. That is why LeVal Filters provide dependable clarification at all times.



Above is a LeVal Portable Filter Station, complete with motor, pump, precoating tank, pipes, and valves. Other styles and models range from bottling strainers to large filter units, to serve every need of the process industries.

LeVal Filters leave no messy cleaning job. Turning a couple of valves backwashes the filter — flushes filter cake to the sewer.

**WRITE FOR  
BULLETIN F-103**

for complete information on the LeVal filtration principle.

## WHITING CORPORATION

LEVAL FILTER DEPT. District Engineers in 26 principal cities

**15667 Lathrop Ave., Harvey, Illinois**

When inquiring specify CP A1986 — see information request blank, pgs. 2-3



## PRODUCTION

of the heavy saturated solution. Solution is complete in approximately one hour. Stock solution containers may be of stoneware, glass, rubber, wood or steel; galvanized iron is unsatisfactory. For smaller quantities of stock solution, beads are available in a pre-weighted mesh bag dissolving package. The 20 lb. unit lifts out of master container and is suspended in a 10 gallon dissolving crock to make the desired 20% solution. Properties of the twenty percent stock solution are: Solids, 2 lbs. per gallon, pH 7.20, heat of solution, 40 calories / gm. Bulletin on request.

RUMFORD CHEMICAL WORKS, Dept. CP, Rumford 16, R. I.

When inquiring specify CP A1987 — see information request blank, pgs. 2-3

### Puller Handles Railroad Cars and Skids

For spotter for rapid, safe economical precision moving of railroad cars is described in detail in illustrated folder. The spotter has a starting line pull of 5000 pounds which can be multiplied by locks. This spotter can also serve in pulling skids, bending pipe and in various handling operations. Single line speed is 45 fpm. Motor is 5 HP intermittent duty, hoist type. Casing is semi-steel; lubrication oil bath fully enclosed. Furnished for 110, 220, 440, 550 (2 or 3 phase, 60 c. AC) or 230 v.DC. Bulletin on "Lo-hoist" Type C-2½ Car Puller on request.

AMERICAN ENGINEERING CO., Dept. CP, Philadelphia 25, Pa.

When inquiring specify CP A1988 — see information request blank, pgs. 2-3

### Air-Tight Vertical Lift Door With Blow-Out Panel

Spring counterbalanced — no weights required — seal provided by inflated rubber tubes



AIR-TIGHT DOOR has interlocked mechanism

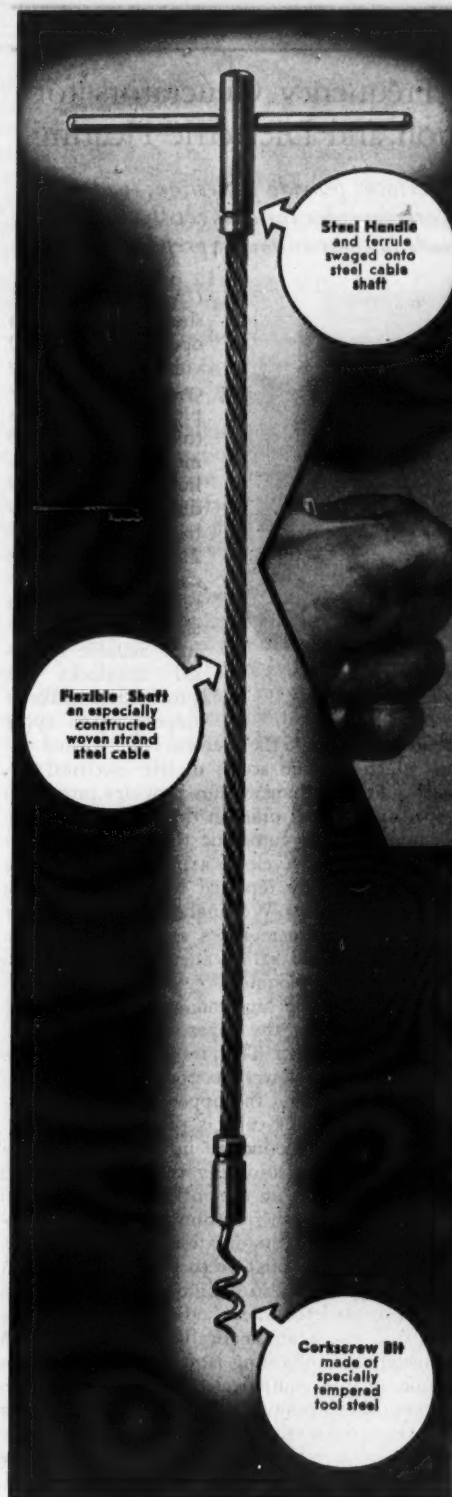
**Uses** — A number of special vertical lift door requirements are met by this recently designed model that is air-tight and equipped with blow out panel, spring counterbalanced (no weights required) and motor operated.

**Features** — Door can be operated for regular service without putting air-sealing mechanism into operation but mechanism is so interlocked that should door be closed and sealed, motor operator will not start the door upward until air seal is released.

**Description** — In the installation pictured the spring counterbalancing mechanism is located on the roof behind the parapet. Air-tightness when the door is closed, is accomplished by means of air inflated tubes of rubber. Inflation is controlled by valves working in conjunction with the motor operating mechanism which is controlled by push buttons. (This door was originally developed for the Unconventional Power Plant Laboratory of the Air Technical Service Command, Wright Field, Dayton, Ohio.)

KINNEAR MFG. CO., Dept. CP, Columbus, Ohio.

When inquiring specify CP A1989 — see information request blank, pgs. 2-3



Steel Handle and ferrule swaged onto steel cable shaft

Flexible Shaft an especially constructed woven strand steel cable

Corkscrew Bit made of specially tempered tool steel

## Remove Packings THIS BETTER WAY



## DURA HOOKS...flexible All-Steel Packing Pullers

Here is a time and labor saving device for removing old packing from stuffing boxes. DURA HOOK (Patented) is a tough, flexible hand tool that can be used in those "hard-to-get-at" places. For best results use two hooks as shown in illustration. Order your requirements today. . .

### DURA HOOK SIZES AND PRICES

Hook No.	Length	Screw Diam.	Packing Space Size Recommended for	Price 1 Hook	Price 2 Hooks
No. 1	7 ½ inches	⅜ inch	¼ to ⅝ inch incl.	\$1.15	\$2.30
No. 2	11 inches	⅜ inch	⅝ to 1 inch incl.	1.40	2.80
No. 3	15 inches	½ inch	⅝ to 1 inch incl.	1.60	3.20
No. 4	19 inches	½ inch	1 to 1 ½ inch incl.	2.80	5.60
No. 5	23 inches	½ inch	1 ½ to 2 inch incl.	3.20	6.40
No. 6	30 inches	1 inch	Over 1 inch	4.80	9.60

### HANDY SETS

Set Number	Description	Price 1 Set	Price 2 Sets
Set A	Consists of first three hooks	\$4.00	\$8.00
Set B	Consists of first four hooks	6.80	13.60
Set C	Consists of first five hooks	10.00	20.00
Set D	Consists of all six hooks	14.80	29.60

ABOVE PRICES U. S. ONLY . . . ASK YOUR JOBBER OR ORDER DIRECT FROM FACTORY . . . INCLUDE PRIORITY

DURAMETALLIC



CORPORATION

KALAMAZOO

MICHIGAN

When inquiring specify CP A1990 . . . see information request blank, pgs. 2-3

# \*Silverstitching

MEANS PRODUCT PROTECTION  
AND LABOR SAVING



**\*Silverstitching . . .** Acme's method of closing cartons . . . is your best assurance that cartons will stay closed under all conditions of handling, storing and shipping.

**Silverstitching** means forming, driving and clinching steel staples through any type of boxboard. It is done on a simple, low-cost machine . . . the *Silverstitcher* . . . on bottoms, tops and flaps . . . in a simple, labor-saving operation.

**Silverstitching** is practical and economical whether you have one packing line or many. For complete details about the advantages of Silverstitching cartons, write for informative, illustrated folder today.

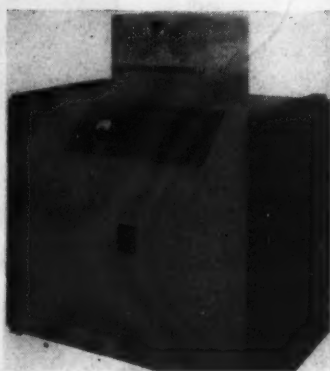
**ACME STEEL COMPANY**  
2808 ARCHER AVE., CHICAGO 8, ILLINOIS  
Branches and Sales Offices in Principal Cities

When inquiring specify CP A1001 — see information request blank, pgs. 2-3

## PRODUCTION

### Radio Frequency Generators for Induction and Dielectric Heating

*Electrical interlocks provide protection; load matching network provides for changes that may be made in composition of preforms*



2 KW UNIT.

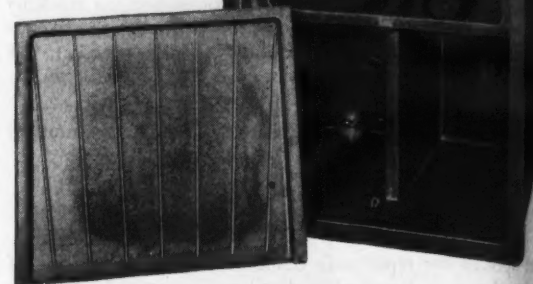
**Uses** — This unit shown in illustration operates from a 220 volt single phase 60 cycle AC power supply and converts this to a frequency of 30 megacycles (30 million cycles), for induction and dielectric heating.

**Features** — It is completely self-contained, enclosed in a shielded metal cabinet. Suitable electrical interlocks are provided to make it impossible to apply

the radio frequency voltage to the preform being heated unless all doors which provide access to live electrical circuits are closed. This equipment thus provides protection to operating personnel. All units in this line (except the 1 Kw) are equipped with automatic timing control permitting adjustment of load cycle to a predetermined time which may be automatically repeated by simply pressing a button. In standard units Westinghouse developed air cooled vacuum tubes eliminate pipes and fittings, assure lower maintenance and add safety factors. Blowers and large contactors are shock mounted.

**Description** — An electrode cage mounted on top of the unit contains two electrodes, the upper one being fastened to the hinged top of the cage. The preform or preforms to be heated are placed on the lower electrode, and the hinged cover is closed, thus bringing the upper electrode in contact with the preform. This cage is provided with electrical interlocks, which are connected in the RF Generator control circuits, thus again affording complete personnel protection. A push button on the inclined control panel permits the operator to start the preform cycle, and an automatic process timer controls the duration of the power application and therefore the final preform temperature. A two position selector switch also located on this panel permits the operator to predetermine whether the heating cycle will be terminated either automatically or manually. A plate current meter, and indicating lamps, give the operator visual indication of the equipments operation. Changes made in the physical composition of the preforms will alter their electrical characteristics. To permit the equipment to be used to cover a wide range of preform characteristics an adjustable load matching net work is provided. The adjustment of this network is simplified by the provision of a single external control knob. Thus, an inexperienced operator, by observation of the plate current meter and manipulation of this control knob can readily make any changes which may be necessary due to changes made in the composition of the preforms. The particular unit described here and illustrated is rated to deliver 2 KW output, and is easily capable of heating 2 pounds per minute on an average general purpose molding material at a power cost of less than 4c per hour on the assumption that the AC pow-

*Special Knight-Ware  
Laboratory Sink  
with Removable  
Drainboard.*



Knight-Ware Laboratory Equipment, such as acid-proof sinks, table troughs, receptors, neutralizing sumps, pipe and fittings, were installed last year in several of the country's modern, new research laboratories. For illustrations and details, write for a copy of Knight-Ware Laboratory Equipment catalog.

Maurice A. Knight, 405 Kelly Ave., Akron 9, Ohio

**KNIGHT-WARE**  
CHEMICAL EQUIPMENT

When inquiring specify CP A1002 — see information request blank, pgs. 2-3



**CENTRIFUGAL PUMPS**

### SPECIALISTS in Pumping "Hard-to-Handle" Liquids

One indication of how thoroughly LaBour pumps are equipped to deal with chemical pumping problems is the wealth of performance data available to users and prospective buyers of LaBour pumps. "Case histories" covering almost every conceivable chemical pumping application have been compiled on LaBour pumps for over 20 years. This knowledge and experience is always ready to help reduce your costs, through increasing the efficiency of your operations.

Write today for details pertaining to your particular needs. No obligation.

**THE LABOUR COMPANY, Inc.**  
1871 Sterling Ave., Elkhart, Ind., U.S.A.

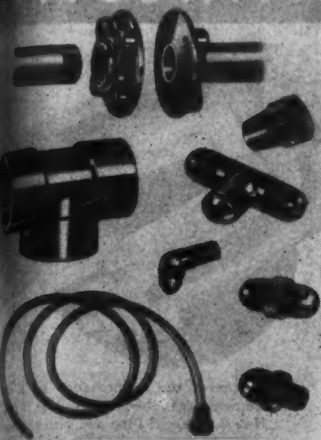


TYPE DPL

When inquiring specify CP A1003 — see information request blank, pgs. 2-3



## PLASTIC Pipe, Tubing and Fittings



**SARAN PIPE**  
½" to 4" I.P.S.

**SARAN  
SCREWED FITTINGS**  
(Molded)  
½" to 2" I.P.T.

**WELDING FITTINGS**  
(Fabricated)  
½" to 4"

**SARAN TUBING**  
½" to ¾" O.D.

**CELLULOSE  
ACETATE  
TUBING**  
½" to 2" O.D.

**SARAN  
S.A.E. FLARED  
FITTINGS**  
(Molded)  
¾" to ¾" O.D.  
Tube Sizes

### GRINNELL

WHENEVER PIPING IS INVOLVED

GRINNELL COMPANY, INC.

Executive Offices, Providence 1, Rhode Island

SALES OFFICES: Atlanta 2, Ga.; Charlotte 1, N. C.; Chicago 9, Ill.;  
Cleveland 14, O.; Houston 1, Tex.; Los Angeles 13, Cal.; Minneapolis 15,  
Minn.; New York 17, N. Y.; Oakland 7, Cal.; Philadelphia 34, Pa.;  
Providence 1, R. I.; St. Louis 10, Mo.; St. Paul, Minn.; San Francisco 7,  
Cal.; Seattle 1, Wash.

When inquiring specify CP A1004 — see information request blank, pgs. 2-3

## SLY DUST CONTROL

NOT EXPENSIVE...  
WIDELY USED!

This is a typical Sly installation. Hundreds of similar installations are in use in connection with production of cement, crushed stone, agricultural limestone, gypsum, asbestos, talc, feldspar, gypsum, gold, copper and iron ore, diatomaceous earth, bauxite, etc.

Sly Dust Filters collect dust generated in such operations as crushing, grinding, screening, conveying, loading, separating, and mixing. They comply fully with the requirements of the laws and regulations of the various states.

Ask for Bulletin 98. Tell us your problem so that we can write you fully.

THE W. W. SLY MFG. CO.  
4754 Train Ave. • Cleveland 2, Ohio



★ One of many SLY Dust Filters in Cement Plants. These filters are weatherproof and may be located outside.

## SLY

PIONEERS  
IN SCIENTIFIC  
DUST CONTROL

When inquiring specify CP A1005 — see information request blank, pgs. 2-3

MAY-JUNE, 1945

## PRODUCTION

er cost is 1c per KW hr. The two tone brown crinkle finish cabinet is 38½ inches wide, 49 inches high and 22 inches deep overall and provided with casters. Other units available are 2, 5, and 10 KW standard NEMA ratings to deliver 5, 15, 30 million cycles for applications on larger preforms and when applications demand larger amounts of power equipment up to 200 KW may be obtained. Complete information concerning this equipment on request.

WESTINGHOUSE ELEC. & MFG. CO., Dept. CP, 511 Wood St., Pittsburgh, Pa.

When inquiring specify CP A1006 — see information request blank, pgs. 2-3

### Suggestions for Proper Application of Coatings for Wood, Concrete & Cork

Manufacturer of industrial coatings emphasizes in instructive booklet directions and recommendations for application so that ultimate protective and decorative qualities may be assured. Surface preparation, discussed at length in relation to various materials such as wood, concrete, is dealt with. The maker's products are described in detail and include concrete, metal and wood primers, standard coatings and shop coatings to protect goods while in transit. Other products include Carbozite Aluminum, Waterproof Paper Sealer & Adhesive. A new development is a cork sealer for protection of cork and cork products. At present it is being used principally for the cork stoppers in alkaline or electrolytic fluid containers. Stack and floor coatings and a non-inflammable solvent for rust are also listed. Copies on request.

CARBOZITE CORP., Dept. CP, First Natl. Bank Bldg., Pittsburgh, Pa.

When inquiring specify CP A1007 — see information request blank, pgs. 2-3

### LOOK INTO GAST ROTARY AIR MOTORS

**CAN'T  
BURN OUT**  
by overload-  
ing. Positive  
starting in  
any posi-  
tion.

**ALWAYS  
EFFICIENT.**  
Automatic take-  
up for wear. No  
springs. Composition  
vanes held against  
cylinder wall by  
centrifugal  
force.

**COMPACT**  
...Unbelievable  
power. Simple,  
economical  
operation.

**NO  
SPARKS...**  
explosion proof.  
Meets every  
safety require-  
ment.

When you "Look Into Gast", you will be convinced that Gast Rotary Design offers unequalled advantages in operating and maintenance economy and long, trouble-free performance. Gast Rotary Air Motors embody all the features of Rotary Design, plus the exceptional construction features illustrated here. For applications where compressed air is available and explosion proof equipment is required, it will pay you to investigate Gast.

Write today for  
**FREE CATALOG**

**ROTARY  
GAST AIR  
MOTORS • COMPRESSORS  
VACUUM PUMPS**

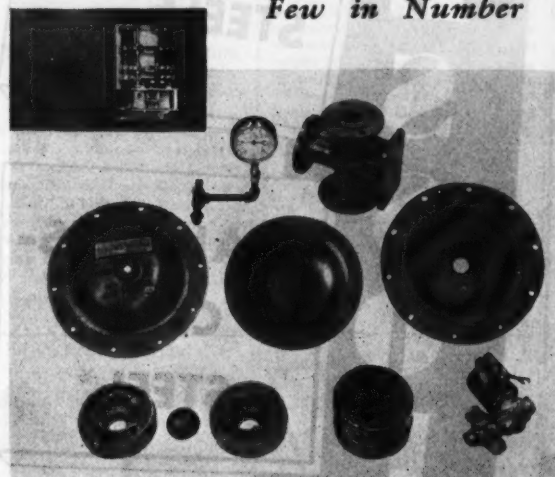
GAST MFG CORP., 101 HINKLEY ST., BENTON HARBOR, MICHIGAN

When inquiring specify CP A1008 — see information request blank, pgs. 2-3

## O.D.S. DIAPHRAGM SLURRY PUMP

### PRACTICABLE

*Because Parts are Simple and  
Few in Number*



There's nothing complicated about the Oliver Diaphragm Slurry Pump. Nor is it an intricate assembly of many delicate parts. All parts of the standard O.D.S. Pump are shown in the above picture. This simplicity is one reason why the pump involves practically no maintenance over long periods.

That the O.D.S. is efficient is evidenced by many repeat orders from process plants. Its versatility is evidenced by the fact it is handling such products as: caustic salt crystals; manganese, titanium and gypsum slurries with particles up to ½ inches; sink-float concentrates; ground cocoa bean shells and water; ammonium acetate; vegetable soup; synrub latex; acetic and propionic acid plus wood oil at 145° C.; 60% hydrofluoric acid at 150° F.; calcium carbonate; clay-oil slurries. Its action causes little or no degradation of crystals.

With several sizes from which to select (ranging from 1 to 3 inch) we have units to handle your products. If you wish, we can arrange the pumps to either meter the flow or to proportion several different slurries. Up to 10 pumps can be operated from one timer. Write our nearest office in detail and request Bulletin 307-R.

### OLIVER UNITED FILTERS INC.

New York 16, N. Y.  
33 West 42nd Street

Chicago 1, Ill.  
221 N. LaSalle Street

San Francisco 11  
California

Western Sales Division  
Oakland 1, Calif.  
2900 Glascock Street

Canada: Sales & Manufacturing Representative:  
E. Long Limited — Orillia, Canada

Factories: Oakland, Calif. — Hazleton, Pa. — Orillia, Canada — Melbourne, Australia  
S-007-5

When inquiring specify CP A1009 — see information request blank, pgs. 2-3

JESSOP

**SOLID  
STAINLESS  
STEELS**

**STAINLESS-  
CLAD  
STEEL\***

• There are many applications where only a solid stainless metal will do the job and for these we recommend Jessop Solid Stainless Steels, of the required analysis to meet specific operating conditions. Where stainless protection is needed on one surface only, use Jessop Stainless-Clad Steel, which will give the performance of solid stainless on the clad side and at the same time save in material and fabrication cost. As producers of both solid stainless and stainless-clad steels we can give impartial advice regarding the type best suited for your purpose. Delivery to meet your requirements.

\*U. S. Patent Nos. 1,997,538 and 2,044,742

**JESSOP STEEL CO.**

HEAD OFFICE AND WORKS

WASHINGTON, PENNA.



Established 1901

## PRODUCTION

### Direct-Connect Coupling

*For testing operations: metering gauges, valve gauges, hydraulic equipment, refrigeration*

**Uses** — This direct coupling has been developed for use in testing operations. Useful to manufacturers of carburetors, aircraft, refrigeration and air conditioning equipment.

**Features** — This coupling fits over the end of any standard type AND10056 nipple, the "dogs" of the coupling gripping securely in the undercut just behind the threads of the nipple. Connecting any fluid or air line with this direct-connect coupling takes only a few seconds and savings in time and labor are reported to be as high as 80%. Coupling is made of durable, light weight aluminum. It fills all standard type AN nipples with the undercut and since these are available with or without the undercut, the former can be installed when reordering nipples. The direct coupling comes in sizes of 1/4", 5/16", 3/8", 1/2", 5/8", and 3/4". Catalog on request.

E. B. WIGGINS OIL TOOL CO., INC., Dept. CP, 3424 E. Olympic Blvd., Los Angeles, Calif.

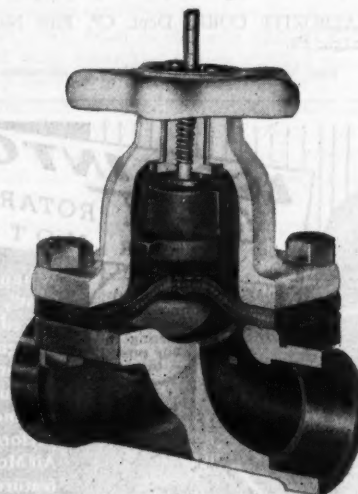
When inquiring specify CP A2001 — see information request blank, pgs. 2-3

### Diaphragm Valve for Syrup Lines

*For drip-tight, leak-proof service; working parts isolated from flow of syrup*

**Uses** — Leak-proof and drip-proof diaphragm valve performance in soft drink syrup lines with full protection of product from contamination.

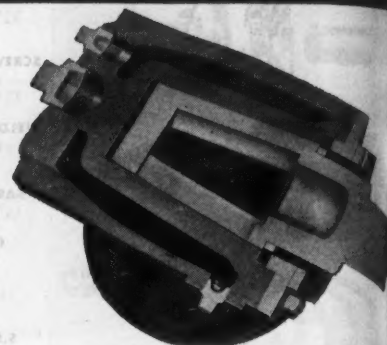
**Description** — A diaphragm type valve has recently been especially designed for such applications. Designated as Series 500 (Saunders Patent Diaphragm Valve with tell-tale indicator) it consists of a bonnet assembly, flexible diaphragm and body. The diaphragm, controlled by handwheel and rising stem, seats tightly against the weir when in closed position. A stud fastens the diaphragm to the compressor, assuring positive opening without sticking. The diaphragm isolates the working parts from the flow of the syrup, this eliminating chance of contamination by lubricant or other foreign matter. Installation is accomplished by brazing into the line. Valves are available bored with approved tolerances, to accommodate standard tubings, or with screwed ends (standard female thread). The bonnet and handwheel are cast iron in white baked enamel; the body is KA2SMO stainless steel available with a sandblast or buffed and polished finish; the diaphragm is of specially formulated Neoprene, lead and sulphur-free, for edible products. (Valves with buffed and polished chrome finish available when restrictions are lifted.) Overall height of the valve in open position is



VALVE diaphragm controlled by and non-rising stem

## H & B JACKETED PIPE and FITTINGS...

For  
Maintaining  
Proper  
Temperatures  
— Hot or Cold



Whenever the maintenance of a uniform temperature in the process pipes is required, H & B Jacketed Pipe and Fittings make efficient processing. This is equally true whether the processing requires a hot or cold temperature, and whether the heat transfer medium is hot water, steam, or hot oil. Materials which at atmospheric temperatures are in a solid or semi-solid state can also be efficiently handled with an H & B jacketed pipe system.

Write for Bulletin S-44, which gives complete information.

**HETHERINGTON & BERNER INC.**  
711 Kentucky Avenue Indianapolis 7, Indiana

When inquiring specify CP A2002 — see information request blank, pgs. 2-3

## Now Also Available in NEW LIGHT DUTY STYLE

*All-Neoprene  
Latex*  
**INDUSTRIAL  
GLOVES**

Impermeable to practically  
All Acids and Caustics  
Highly Resistant to Oils  
and Greases

### 5 POPULAR STYLES

★ No. 5760-S, 18" LONG  
EXTRA LONG GAUNTLET  
GAUGE .030 TO .040  
SIZES 10, 11

★ No. 5737-2, 14" LONG  
LONG GAUNTLET  
GAUGE .030 TO .040  
SIZES 9-10-11-11½-12

★ No. 5705-S, 11" LONG  
SHORT GAUNTLET  
GAUGE .020 TO .025  
SIZES 9-10-11

★ No. 5703-S, 10½" LONG  
STANDARD DUTY  
GAUGE .015  
SIZES 7-8-9-10-11

★ No. 5702-S, 10½" LONG  
LIGHT DUTY  
GAUGE .010 TO .012  
SIZES 7-8-9-10-11

**SEIBERLING LATEX PRODUCTS CO.**  
AKRON, OHIO

200-5th Ave., Bldg., New York

Merchandise Mart, Chicago

When inquiring specify CP A3005 — see information request blank, pgs. 2-4

CHEMICAL PREVIEW

When inquiring specify CP A3000 — see information request blank, pgs. 2-3



## PRODUCTION

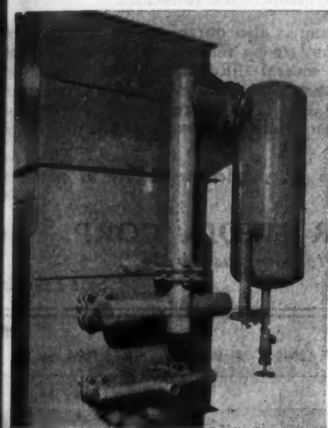
approximately 5 3/4 inches; face-to-face 4 inches. This was developed especially for use in production of nationally distributed beverage. Types are also available for other bottling plant service such as caustic to bottle washers, rinse lines, air, etc. Valves are also available with screwed or flanged connections.

WILS-McCANN CO., Dept. FP, 3025 Western Ave., Chicago 18, Ill.

When inquiring specify CP A2004 — see information request blank, pgs. 2-3

## Oil Removal Unit Now Available With Refrigerant Gas Condenser

*Cylindrical drum located at coil outlet so that gas enters with tangential motion*



DRUM with gauge and valve

**Uses** — More complete removal of oil from refrigerant gas is provided as well as power savings and condenser water economies in operating condenser equipment. Scale formation reducing condenser capacity is also a factor.

**Description** — Maker of refrigerant gas condenser now offers a special

unit as a part of standard condenser which provides for increased removal of oil from refrigerant gas. Known as the "Oilout" it utilizes a cylindrical drum located at the outside of the "Duo-pass" coil of the condenser so that the refrigerant gas enters with a tangential motion. Extension of the system from a 4 inch pipe to a 14 inch drum (in the model illustrated) reduces the velocity of the gas so that the oil is easily removed and held by the wall and separator plates of the trap. A sight gauge and valve for draining the oil are provided. The "Duo-Pass" Condenser uses atmospheric air as the cooling and condensing medium, passing it through a spray chamber which increases its effect by evaporative cooling. When entering air temperature is 45° or below, the condenser operates as a dry cooler. Water sprayed over condenser coils is recirculated. Located on the side of the condenser is a by-passed air stream. The Duo-pass takes the superheat out of the refrigerant gas, reducing it to a saturated vapor near condensing temperature. It is then condensed at a low temperature in the sprayed coils. (Leaving air is at a lower relative humidity so that its moisture does not form vapor or rain if discharged into a restricted space.) The unit provides increased oil removal. Condenser proper effects power savings of 15% to 35% and great savings in water. Only the small quantity of water evaporated — about 5% is consumed. Scale formation avoided.

NIAGARA BLOWER CO., Dept. CP, 6 East 45th St., New York 17, N. Y.

When inquiring specify CP A2005 — see information request blank, pgs. 2-3

## Some Time and Man-Power Saving Equipment



Barrel and Box Grab

For picking up any type of wood or steel barrel, box or container, from 40" diameter down to small nail keg size. Will lift up to 2000 lbs. Once you use it you will wonder how you ever got along without it—order yours today.



Hand Dump Truck

Constructed of heavy sheet steel, reinforced with band at top edge, stout 3/4" round rod iron handle welded to truck. This truck measures 25 3/4" by 45" at the top and 25 3/4" by 27" at the bottom by 17 1/2" deep—carries about 1/2 cu. yd. and weighs approximately 125 lbs. Equipped with two 8" semi-steel wheels and two 4" metal swivel casters.



Portable Work Table

\$3700

To rest tool box, light dies, fixtures and other items. Convenient height and easy rolling from one department to another. Sturdy angle iron frame with heavy sheet metal top, all welded construction. Measures 18" wide, 36" long, 34" high, Four, 5" swivel casters. Weight approximately 90 lbs. Finish, P.S. gray.

Item  
NS-288  
\$5525



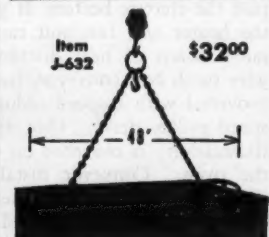
Push Truck  
Metal Bound

May be used as a push truck or with lift truck. Built of all hardwood, completely metal bound, all welded construction, no bolts used. Four sturdy 5" swivel casters. Metal parts are painted standard P.S. gray, wood left natural.

### TWO STANDARD SIZES

Item NS-418A \$2950  
Measures 24" wide, 36" long, 26" high overall. Weight 185 lbs.

Item NS-418B \$3350  
Measures 28" wide, 48" long, 30" high overall. Weight 260 lbs.



Universal Grab

Use for picking up all types of heavy boxes, crates, bales or other loads where hooks may be used. Heavy, forged steel hooks with an adjustable spread of from 16" to 48". Adjustable for use where ceilings are high or low. Sturdy 3/4" BBChains. Will save a lot of man-power.



Barrel Truck

Handles with ease barrels weighing up to 1,000 lbs. Weighs but 85 lbs. To load, shove truck up against barrel or drum, then drop sliding steel catch over rim... pull toward you and truck loads automatically without rocking or tugging—loads from row as easily as when barrel stands alone.

Sturdily constructed of heavy steel, two 10" roller bearing wheels. Greatest width only 22", permitting it to pass through aisles and doors too narrow for many trucks.

Item S-911-M \$3350  
Equipped with metal wheels

Item S-911-R \$3850  
Equipped with molded-on rubber wheels



Utilities Rack on Wheels  
\$5550

For handling parts or small items in course of production or assembly. Use at machine and also for conveying materials. All steel welded construction. Width 24", height 50", length 48" overall. Clearance between shelves 12". Four 6" roller bearing casters, two of which are rigid and two swivel. Weight 220 lbs. Finish P.S. gray.



Stock Positioner

Item NS-988  
\$1850

Designed for holding barrels, cans, boxes, etc., filled with small parts, liquids, powdered plastic or other materials within convenient reach of operator sitting on a stool and working at bench height. Saves stooping, helps speed up production. Built of angle iron and bar stock, all welded construction. Two rigid and two swivel, 3" metal casters. Overall height 36", cradle length 13", cradle tilt, 45°, floor space occupied 18" by 18", weight 35 lbs., finish P.S. gray.



Shovel  
Truck

For pick-up and moving barrels, hampers or cases; sturdily constructed and easy wheeling. Overall height 48". Heavy steel nose plate, 19" wide at base, 13" wide at front. All welded construction. Two 6" diameter wheels. Convenient shaped handles of heavy 1 1/4" O.D. tubing. Weight 50 lbs. Finish gray.

Item B-339-A \$2500

Plain bearing metal wheels

Item B-339-B \$2750

Roller bearing metal wheels

Item B-339-C \$3250

Rubber tire, roller bearing wheels



Industrial Dust Pan

No shovel to bother with. Moves around in places too tight for a wheelbarrow. Very light to handle. Weighs only 45 lbs. Capacity one bushel. Exceptionally well constructed to withstand rough treatment in industrial plants.

The pan or metal basket which measures 18" x 18" x 18" is made of 16 gauge sheet steel, the frame of 1" x 1 1/4" x 1/4" angle iron, the handle of 1" tubing, all welded construction. The overall height is 48". Two 8" rubber tired, ball bearing wheels.

Designers and builders of every conceivable type of materials handling equipment... for pick-up, loading, moving, dumping or storage... made of metal, or wood, or combination. Tell us what you wish to accomplish, and we shall gladly offer you our recommendations and quote you on handling equipment designed to fit your plant and your product.

**NOTE:**—Always order by "Item" number, this will prevent error. Accompany orders with priority to avoid delay. All prices f.o.b. Detroit.

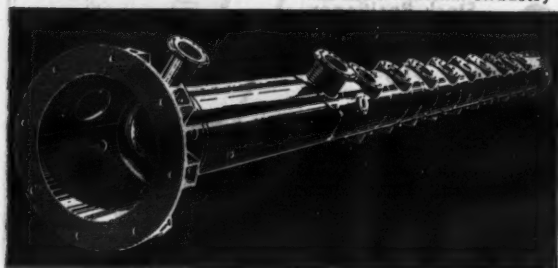
**Palmer Shile Co.**  
7128 West Jefferson Ave., DETROIT 17, MICH.

When inquiring specify CP A2006... see information request blank, pgs. 2-3

# National WELDED PRODUCTS

From Open Hearth, Stainless, Alloy and Clad Steels

An Intricate Fabrication  
for the Petroleum Industry



## MEET THE MOST EXACTING AND UNUSUAL SPECIFICATIONS OF EVERY INDUSTRY

The entire manufacturing cycle is carried on within "National's" own plant—forming, welding, stress relieving and machining, protected by constant X-ray and manual inspections. For durable equipment in the chemical, processing and petroleum industries, call upon "National"—they can serve you well!

X-RAY TESTING  
API-ASME  
U-60, U-60  
CODES  
STRESS  
RELIEVING

**National**  
**ANNEALING BOX COMPANY**

API ASME U-60 U-60 Codes • Stress Relieving • X-ray  
Pledged to Quality Since 1895

WASHINGTON, PENNA.

When Inquiring specify CP A2007 — see information request blank, pgs. 2-3

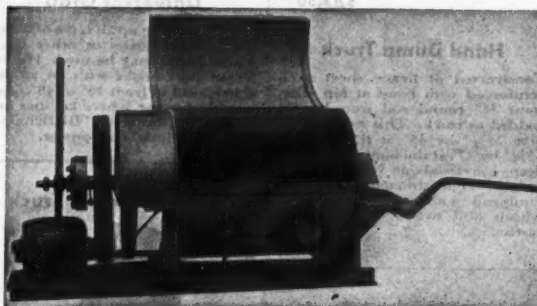
## PRODUCTION

### Dual Oven Conveyors Fed from One or Both Ends At Once

*Drive mechanisms at each end permit operation of conveyors at any desired speed in same or opposite directions*

**Uses** — For processing operations involving preheating, drying, baking which require wide variations in the speed with which materials are passed through the several steps. For flexibility in loading and unloading.

**Description** — A continuous heat processing oven, just introduced, is designed especially for preheating and baking electronic devices but presents wide possibilities for other applications. It is built of the maker's special dual panel assembly with no through bolts or metal joints. Electric heating elements are mounted in the oven just below the roof, and a large motor driven multi-blade fan is mounted on the roof. Heat from the elements is drawn through the fan into a vertical duct to the bottom of the oven and distributed evenly by means of louvers in the oven floor upward through the work moving on conveyor belts and up past the electric heaters. If gas or steam heating is desired, the heater and fan unit can be set on the roof with the same means of heat distribution and recirculation. Each wire mesh belt conveyor, running between angle guides, is provided with a speed reducer, roller chain and a variable speed pulley drive. One drive mechanism (not shown in illustration) is mounted on the bottom base at each end of the oven. Conveyor installation design, embodying the drive installations mentioned above, permits operation of the conveyors at any desired speed in the same or opposite



### 5 Reasons Why the Multi-Mixer Has more advantages

1. A better mix in less time
  2. Multi special arranged paddles
  3. All material in action
  4. Well built and dust-proof
  5. Fully equipped with SKF bearings
- Built in sizes 3 to 60 cu. ft. Motor drive or geared head motor drive or tailor made to fill your requirements.

Write for full information.

**The Multiplex Concrete Machinery Co.**  
Elmore, Ohio

When Inquiring specify CP A2008 — see information request blank, pgs. 2-3

## GLASS

*Makes an Excellent  
Filter Medium for  
Strongly Acid  
and Hot Solutions*

To the process plant operator, chemical glass needs no introduction as a material highly resistant to most chemicals, hot or cold. Chemical glass, spun and woven into a filter medium, offers the same acid and temperature resistance.

F-M Glass Filter Medium is also durable in a mechanical way being carefully spun into strong threads and woven into tough cloth. We can offer several different weaves, ranging from coarse to fine, from heavy to medium weight. And we can offer trained technical advice, if desired, and laboratory tests for determining the best grade of Glass Medium for your particular problem.

In writing please give as complete a picture as possible of your problem.

**FILTER MEDIA CORP.**

Irvington-on-Hudson, N. Y.

Chicago

Salt Lake City

When Inquiring specify CP A2009 — see information request blank, pgs. 2-3

*Many Engineers Ask:*  
**"CAN RODNEY HUNT SUPPLY ROLLS  
FOR Special MACHINE WE ARE  
BUILDING?"**

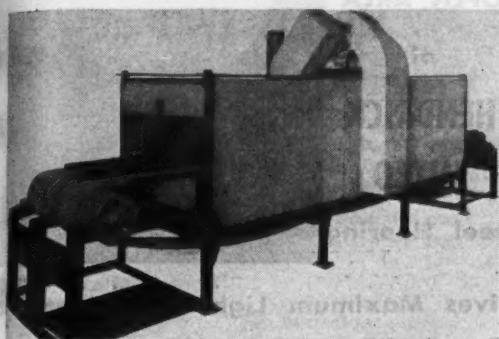
**The answer is: "Yes, that's just what we do!"**  
We build hundreds of such rolls each year. Engineers tell us the size and purpose of the rolls needed for a new machine — and we do the rest. Usually an exchange of ideas between machine builder and roll builder is of great help in getting the best design and construction. Our "Shaf-tite" patented construction plus years of experience are of far-reaching practical value. Tell us your problem.

**RODNEY HUNT MACHINE COMPANY**  
273 Maple Street  
Orange, Massachusetts

When Inquiring specify CP A2010 — see information request blank, pgs. 2-3



## PRODUCTION



CONTINUOUS HEAT PROCESSING OVEN

directions. For example, in the application of the oven to preheating and baking electronic devices, the conveyor speed through the preheat section was three times that of the conveyor through the baking section. Thus, individual pieces of work set directly on the belt, or baskets or trays of bulk materials can be fed simultaneously from both ends of the oven or in two rows from one end as desired. The particular oven described is only 15' long and 3' wide but design is flexible enough to permit changes in dimensions and construction details to meet requirements.

W. S. ROCKWELL & CO., Dept. CP, 50 Church St., New York 7, N. Y.

When inquiring specify CP A2011 — see information request blank, pgs. 2-3

## Small Transparent Gravity Oiler

Available in sizes as small as 1/8 oz., positive locking retain setting under vibration



MIDGET OILER

**Uses** — As an adjustable drop oiler of small capacity feeding filtered oil. Especially suitable for very slow or medium feeds.

**Features** — This oiler meets heavy duty requirements, withstanding vibration and is furnished in capacities not heretofore generally available. Meets needs for transparent oiler in miniature size. Slow drop feed even with light oil.

**Operation** — Oil is fed by gravity through adjustable port, which can be wide open or entirely closed. Flow is adjusted by placing a standard hexagonal key through the hollow lock screw into set screw and adjusting to suit. Positive locking is provided to retain setting under vibration and location of adjusting screw in reservoir prevents tampering.

**Description** — Two main parts—base and reservoir, of brass and clear unbreakable plastic respectively. Self-closing hinge lid on top of reservoir makes filling easy. Construction makes it possible to furnish oiler in special light reservoirs. Four body sizes: 1/8, 1/4, 1/2 and 1 ounce; 1/8 or 1/4 PT. An oil filter is placed over the oil port protecting bearing.

W. S. ROCKWELL CORP., Dept. CP, 3461 S. 3rd St., Milwaukee 7, Wis.

When inquiring specify CP A2012 — see information request blank, pgs. 2-3

# WaterFOG AIDS FIREMEN

## IN "Spectacular Rescue"



There's an airplane inside that inferno—a dummy plane drenched in gasoline and then set on fire at the New Haven Fire Department's new training grounds.



Rockwood WaterFOG, delivered from two extension applicators, envelops a fireman who enters the roaring flames to save a dummy pilot, then rapidly cools and confines the blaze.



Speedier extinguishment of flammable liquid fires and an approximate 50% reduction in water damage are predicted by Chief Paul Heinz of the New Haven (Conn.) Fire Department, now that he has equipped his department with Rockwood WaterFOG nozzles and extension applicators.

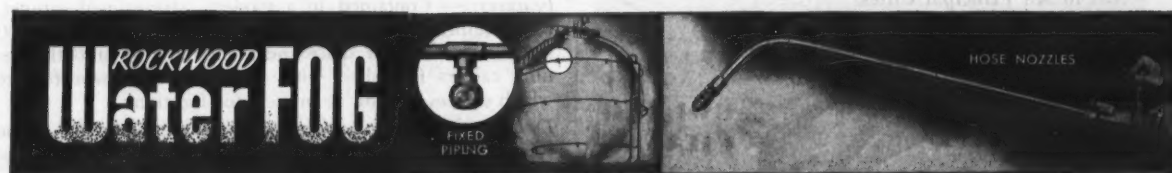
WaterFOG nozzles make water effective against flammable liquid fires by transforming it into myriads of tiny particles—far smaller than spray—with tremendous heat-absorptive power. There's no splashing—a cloak of cooling, smothering fog falls gently over the combustion area, quickly con-

trolling and confining the fire.

Industrial plants, too, protect lives and property with WaterFOG. Rockwood installations of fixed piping and WaterFOG heads are used by hundreds of refineries, chemical plants, utilities, etc. They are approved by Underwriters' Laboratories and Associated Factory Mutuals. Write for Bulletin 123. *Fire Officials and Executives!* Colored movie (16 mm.), showing tests of Rockwood WaterFOG, are available to city officials and business executives.

ROCKWOOD SPRINKLER CO., 76 Harlow St., Worcester 5, Mass.  
Specialists in Fire Protection Engineering Equipment and Installation since 1907

Water Engineered by Rockwood Cools, Confines, Smothers Oil Fires



When inquiring specify CP A2013 . . . see information request blank, pgs. 2-3

OTHER TESTS SHOW HOW QUICKLY  
**WaterFOG**  
SMOTHERS FLAMMABLE LIQUID FIRES

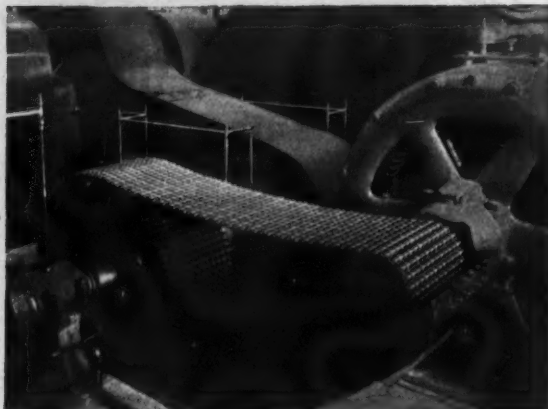


Tank and trench are sprayed with gasoline under pressure.



After gasoline has been set afire, WaterFOG extinguished the blaze.

## How to transmit FULL POWER



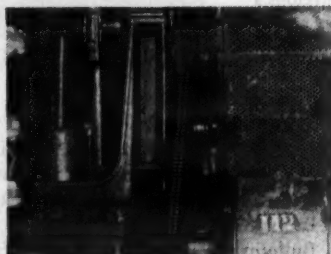
Diamond Chain Drive from 500 h.p. Diesel engine driving electric generator in pipe line station.

### FROM YOUR ENGINES And From Your Motors

With efficiency at 98-99 per cent Diamond Roller Chains transmit full power from electric motors and engines. Diamond Chains operate continuously for years with very little maintenance.

Diamond Drives do not slip, — they maintain the top production speeds of the driven machines. Their hardened rollers are cushioned on films of oil, insuring smoothness and quietness. For small or large horsepowers, up to 2000 h.p., and at low or high speeds, Diamond Chains are equally capable.

Year after year, in industrial plants of all kinds, thousands of Diamond Roller Chain Drives are transmitting power efficiently to every conceivable type of machine. You can make improvements, prevent delays and reduce costs with Diamond Drives. Our Catalog 617 contains complete data. DIAMOND CHAIN & MFG. CO., 411 Kentucky Ave., Indianapolis 7, Ind. Offices and Distributors in All Principal Cities.



Diamond Roller Chain Drive on pulp pump in sugar refinery. 5 h.p., 1100 r.p.m.

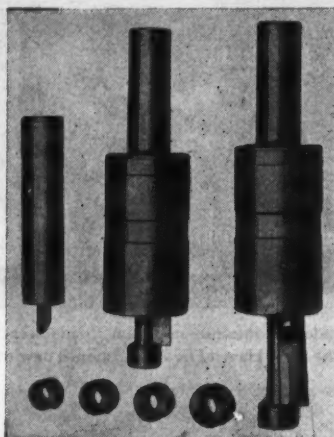
**DIAMOND ROLLER CHAINS**

When inquiring specify CP A2014 — see information request blank, pgs. 2-3

## PRODUCTION

### Counterbore Design Allows Reset Of Bit to Desired Recess Size

*Even after many grindings, bit may be reset to recess size, retaining extreme tolerances on standard, non-standard diameters*



ADJUSTABLE COUNTERBORES

standard diameters. Small machine screw head diameters are easily accomplished with these tools. Deep recesses in laminates, plastics and the softer metals are cut at high speeds without withdrawing the tool.

**Description** — These counterbores with desired pilots are available in sizes from 1/4" to 1" with either straight or tapered interchangeable shanks. High speed steel bits are standard with the tool. Carbide tipped and alloy bits are also available. Only the ends of the bit need be reground on a bench grinder, thus eliminating the necessity of tool room grinding and skilled labor. Any desired contour can be ground on the end of the bit for concave, convex and other desired recess bottoms. Tool bit can be removed from holder while it is on the machine eliminating break-up set-ups.

PRECISION MECHANICAL LABORATORY, Dept. CP, 119 W. 63rd St., New York 23, N. Y.

When inquiring specify CP A2015 — see information request blank, pgs. 2-3

### High Frequency Heating Unit for Rubber, Plastics, Drugs

*Contained in compact cabinet; detachable work oven atop cabinet has inside light and windows for viewing work during heating cycle*

**Uses** — For high frequency heating of a wide range of dielectric materials.

**Features** — Contained in a modern, streamlined cabinet, (steel reinforced) this 1 kilowatt model occupies only 20 x 24 inches of floor space and is mounted on smooth running casters furnished with a special lock-down feature which secures the unit at any selected location.

**Description** — The detachable work oven is situated at the top of the cabinet, and is equipped with an inside light and window to permit the operator to view the work during the entire heating cycle. A foot pedal switch opens the oven door, leaving the operator's hands free to insert

## THE 90%

### OPEN AREA

of

**HENDRICK**

**MITCO**

**Steel Flooring**

### Gives Maximum Light and Ventilation

Because the openings in all types of Mitco Open Steel Flooring are rectangular in shape, and because Mitco construction uses no bolts, rivets, or acute angle joints to obstruct light and ventilation or to retain dirt and refuse, Mitco Open Steel Flooring provides and maintains maximum light and ventilation from level to level. Mitco Open Steel Flooring has 90% open area. Note the absence of shadows at the floor level.

## HENDRICK MANUFACTURING CO.

Carbondale, Penna.

30 Church Street, New York City

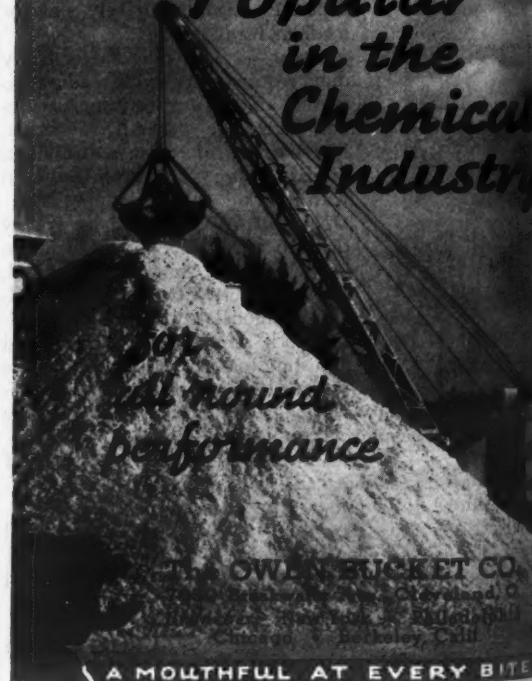
Sales Offices in Principal Cities

Also manufacturers of Perforated Metal Screens, Perforated Metal Grilles, Light and Heavy Steel Plate Construction

When inquiring specify CP A2016 — see information request blank, pgs. 2-3

## OWEN BUCKETS

*Popular  
in the  
Chemical  
Industry*



When inquiring specify CP A2017 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## Reduce Maintenance Costs with HAVEG Plastic Chemical Equipment

- ④ Standard Size. Tanks-Towers Piping-Valves Fittings-Pumps Accessories
- ⑤ A tough, strong, resilient plastic
- ⑥ May be used continuously at 265° F.
- ⑦ Chemically Resistant Throughout Not a Lining or Coating
- ⑧ Seamless, one piece units as large as 10 ft. dia. 12 ft. high
- ⑨ Unaffected by rapid changes in temperature
- ⑩ Send for data, bulletin F-4

**HAVEG CORPORATION**  
NEWARK 7, DELAWARE  
FACTORY - MARSHALTON, DELAWARE



CLEVELAND 14 1201 Palmer Building CHICAGO 11 1201 Palmer Building DETROIT 11 2832 E. Grand Blvd. LOS ANGELES 11 601 W. 11th St.

When inquiring specify CP A2018 — see information request blank, pgs. 2-3

## This Bulletin

### TO OBTAIN Required GAS PRESSURES

If you are interested in a gas pump that will keep pressures right where you want them — and still be economical on power and maintenance costs—you should have a copy of Bulletin 31-B-15. A copy is waiting for your request.

**ROOTS - CONNERSVILLE  
BLOWER CORPORATION**  
One of the Dresser Industries  
505 Richland Ave.,  
CONNERSVILLE, IND.



## GAS PUMPS

When inquiring specify CP A3019 — see information request blank, pgs. 2-3

MAY-JUNE, 1945

## PRODUCTION

the work into the oven. Application of power to the work is controlled by a single or double pushbutton located at either side of the cabinet. Duration of the oven cycle is controlled by a foolproof, automatic timer, permitting operation by non-technical personnel. This "Megatherm" unit identified as "MD-1A" is well suited to pre-heating plastic preforms, utilizing it as a basic unit for incorporation into molding presses or into special production set-ups. The flexible output circuit permits processing of an exceptionally wide range of load weights, heights and materials. Pre-forms are through heated, uniformly, in a matter of seconds. Highly versatile the unit is well adapted for the sterilization of foods, and general purpose heating of rubber, wood plastics and drugs. The new model is equipped with a cord and plug to facilitate installation at any convenient 220 volt, single phase 60 c. AC outlet and supplies 3500 BTU per hour at its operating frequency of 27 megacycles. Other frequency ranges are available for special purposes, and where necessary, the equipment can be provided for use with other power supply systems. Total power taken from the line is 2 KVA, with an overall efficiency of 55% and a power factor in excess of 90%. The easily removable front panel is attached to the cabinet by four screws, providing ready access for maintenance and adjustment. Two dials at the front of the unit indicate operating conditions at all times.

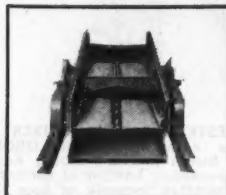
FEDERAL TELEPHONE & RADIO CORP., (Industrial Electronics Div.), Dept CP, 67 Broad St., New York 4, N. Y.

When inquiring specify CP A2020 — see information request blank, pgs. 2-3

## A NEW HIGH IN PURITY

achieved through  
a change of method

By discarding traditional yard-screening and using instead a Robins Hydrex Screen, a manufacturer in the process industry is now securing an end-product "100% pure" in place of merely "commercially acceptable". Microscopic contaminants being removed are so dispersed in the slurry that only about 150 lbs. are encountered in some 12 tons of mixture; yet the Hydrex Screen apparently removes them all. Besides, production is at a greatly accelerated rate; instead of a life of only a few hours (as in the case of silk or other cloth) the metal cloth on the Hydrex is still in use after 7 months of continuous service. A Hydrex Screen occupies only a small area. It is economical to buy and to own. Full particulars are available gratis. When requesting them, please address Dept. CP-5.



For Material Aid in  
Materials Handling

...It's ROBINS

ENGINEERS • MANUFACTURERS • ERECTORS

**ROBINS  
CONVEYORS**  
INCORPORATED  
Founded in 1896 as Robins Conveying Belt Co.  
PASSAIC • NEW JERSEY

MATERIALS HANDLING MACHINERY

When inquiring specify CP A2021 — see information request blank, pgs. 2-3

# Zenith

THE PULP PRESS THAT DEWATERS  
ANY PULP OR SLURRY AT THE  
RATE OF UP TO 15 TONS PER HOUR



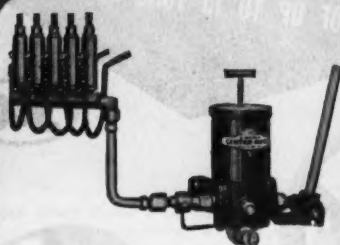
If your manufacturing process requires the dewatering of any crystalline, granular or fibrous slurries, you will want to know more about the giant Zenith Pulp Press. This continuous press dewaterers up to fifteen tons of pulp in one hour. Pressure is transmitted (see cut away view) by means of a slowly revolving spiral-bladed spindle. Because of its built-in heating system and design of its walls, draining is doubly efficient. For complete facts write today to:

JACKSON & CHURCH CO., SAGINAW, MICHIGAN

When inquiring specify CP A2022 — see information request blank, pgs. 2-3

# Install LINCOLN

## CENTRO-MATIC LUBRICATING SYSTEMS



They are simple to install on all types of machinery used in the chemical industry—an injector connected to each bearing by tubing, and a hand or power-operated lubricant pump, gives you a modern single-line centralized lubricating system that will insure long life to all bearings. Any maintenance man can make the installation. No special tools are needed.

POWER  
BEARINGS  
MACHINE  
HOURS  
MAN  
HOURS

### INJECTOR COVERS

Give Added  
Protection



Metal covers for injectors can be furnished on Lincoln Centro-Matic Systems. These covers give added protection to injectors on machines that operate in surroundings where corrosive fumes are prevalent.

### Write for Bulletin

Investigate this opportunity for increased operating efficiency by mailing the coupon below for a complete bulletin describing Lincoln Centro-Matic Systems.

### I WOULD LIKE TO HAVE FREE BULLETIN On Lincoln Centro-Matic Lubricating Systems

Name \_\_\_\_\_  
Title \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_  
CP 8239

**LINCOLN**

ENGINEERING COMPANY

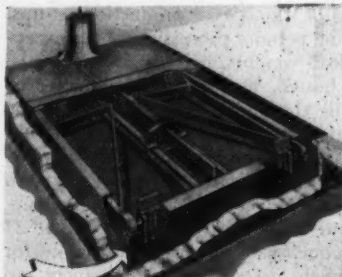
1000 N. 10th St., St. Louis 10, Mo., U.S.A.

When inquiring specify CP A2023 — see information request blank, pgs. 2-3

## PRODUCTION

### "Free Floating" Platform Scales

Open construction and self-contained types speed up weighing time since load need not be centered for true weighing



Design prevents transmission of lateral platform motion

Uses — For quick, accurate weighing of loads such as may be handled on hand lift trucks, skids, pallets or otherwise positioned.

Features — Equal load position, spreading the same weight through all four platform corners, (see illustration) permits positioning of load on any part of platform at no sacrifice in accuracy, thus speeding up weighing time. This "free-floating" platform construction prevents lateral platform motion from being transmitted to the platform lever system. It absorbs all swinging motion and results in pivot or bearing wear only when load is actually weighed. Binding and friction are eliminated.

Description — All upper and lower platform frames are constructed entirely of structural steel plate. Pivots, bearings, loops are plated. Self-contained dormant platform is extremely shallow, fitting into wood, metal, concrete,

## MEDICINAL JELLY

is processed in a

**GROEN**  
TILTING TYPE  
KETTLE



A LARGE WESTERN MANUFACTURER of Pharmaceuticals uses this 30-gal. GROEN Stainless Steel Steam Jacketed Tilting Kettle for efficiently processing batches of medicinal jelly. This is another example of how this splendid kettle serves Chemical Plants, Drug Makers, Food Packers, etc. Equipped with single motion motor driven agitator with fully enclosed working parts. Easily operated, fully controllable worm gear tilting mechanism. Quick-heating super-jacket, non-scorching in performance. A great production unit. Check into it. Write our Priority Division today. GROEN MFG. CO., 4535 W. Armitage Ave., Chicago 39, Ill.

BUY  
U.S. BONDS  
STAMPS

WORLD'S LARGEST PRODUCERS OF  
STAINLESS STEEL STEAM JACKETED KETTLES

When inquiring specify CP A2024 — see information request blank, pgs. 2-3

## BLACKMER ROTARY PUMP

are COST CUTTERS

Both HAND PUMPS  
POWER PUMPS

### SELF-ADJUSTING FOR WEAR

"Bucket Design", swinging vanes, automatically compensate for wear. When the "buckets" finally wear out, a simple replacement job restores the pump to normal capacity.

This means

LOWER PUMPING COSTS



Write for Bulletin  
306 "Facts about  
Rotary Pumps"

## BLACKMER PUMP COMPANY

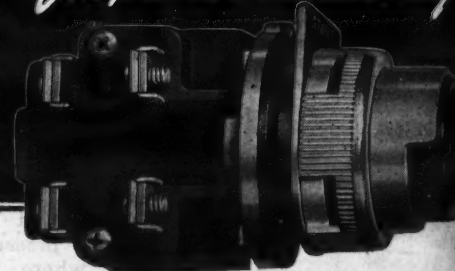
1840 Century Avenue Grand Rapids 9, Michigan

### POWER PUMPS - HAND PUMPS EZY-KLEEN STRAINERS

When inquiring specify CP A2025 — see information request blank, pgs. 2-3

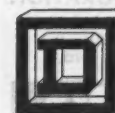
## NEW LINE OF OIL-TIGHT PUSHBUTTONS

for panel mounting



ACCESSIBLE TERMINALS! MORE COMPACT  
MOUNTING IN ANY POSITION! MINIMUM  
STOCK FOR ANY COMBINATION! SEPARATE  
BLOCKS AND OPERATORS! INTERCHANGEABLE

Write for Bulletin No. 202. Address Industrial Controller Division, 4041 North Richardson Street, Milwaukee 12, Wisconsin.



**SQUARE D COMPANY**

DETROIT • MILWAUKEE • LOS ANGELES

When inquiring specify CP A2026 — see information request blank, pgs. 2-3



## PRODUCTION

position floors requiring minimum depth. Open construction is built on steel "H" frame on which the entire system is mounted, keeping all corner fulcrum supports in permanent alignment. Both types may be moved without damage. Catalog describing these and other scales on request.

W. & TOWNE MFG. CO., Dept. CP, (Philadelphia Pa.), Philadelphia 24, Pa.

When inquiring specify CP A2027 — see information request blank, pgs. 2-3

### Fluorescent Units for Offices, Drafting Rooms and Other Plant Areas

A twenty-eight page catalog illustrates and describes a complete line of fluorescent lighting equipment for offices and drafting rooms and similar areas. Each model is illustrated in great detail. Photos show the various types of mountings in which each type is available, shielding and wiring designs, etc. Complete specifications are given and the print type drawings show details of construction and aid in making selections to meet specific requirements. The back pages of the booklet are devoted to a number of fluorescent fixtures and a damage control light for emergency lighting. Catalog Number 45 on request.

F. W. WAKEFIELD BRASS CO., Dept. FP, Vermilion, Ohio.

When inquiring specify CP A2028 — see information request blank, pgs. 2-3

### Air Operated Hydraulic Presses

No cams or levers: ram pressures controlled up to 9000 pounds by compressed air supply multiplied by hydraulic cylinders 50-1

**Uses** — Stamping: in steel, copper, wood, plastics, etc. Controlled pressure and the fact that varying thickness does not effect the depth of the imprint makes it especially suitable for this type of work. Riveting: simple or multiple arrangements of solid tubular and split rivets easily accomplished with correct pressure. Assembly: Inserting metal parts, drill bushings, etc. into molded plastics or drilled metal panels, crimping metal retainer rings and many assembly operations. Forming, punching, cutting.

**Features** — Compact, all working parts contained in housing. Simplified operating principal: no cams, levers, pins, gears in pressure mechanism. Versatile. Positive control by simple adjustment of oil regulating valve.

**Description** — Available in four models. Model 900 rated at 30 strokes per minute handles work up to 12 inches in diameter. Capacity over table plate 10 1/4 inches. Ram size is 1 inch in diameter with a movement of ram

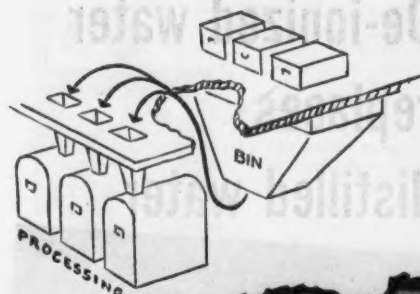
(stroke) of 2 inches. Model 900 X is same as Model 900 except it has a rating of 60 complete strokes per minute. Model 900-5 is rated at 15 strokes per minute — 5 inch movement of ram. Model 900-5X same as 900-5 but with rating of 30 strokes per minute. Models 900-5 and 900-5X are like illustration shown here. Stand may be used with Models 900 and 900X if desired. Literature on request.

AIR-HYDRAULICS (Div. Byer Machine Co.), Dept. CP, Jackson, Mich.

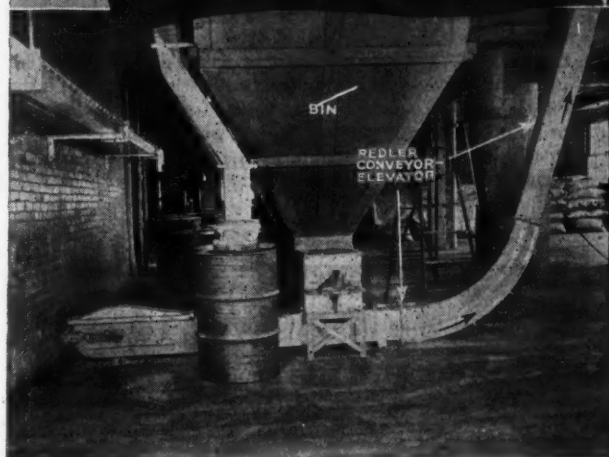
When inquiring specify CP A2029 — see information request blank, pgs. 2-3

MAY-JUNE, 1945

*The Problem —  
elevate bulk chemical  
from Bin — distribute to  
3 processing machines —  
prevent contamination  
during handling*



**The S-A Answer**  
FITS ALL THREE  
NEEDS TO A "T"



HORIZONTAL  
CLOSED-CIRCUIT  
REDLER CONVEYOR

HEAD END OF REDLER  
CONVEYOR-ELEVATOR

Horizontal Closed Circuit REDLER takes chemical from REDLER elevator — discharges to 3 processing machines — re-circulates material until machines are ready to use it.

Horizontal inclined REDLER draws material from bin, feeds to horizontal REDLER on floor above. Sealed REDLER casings guarantee against contamination by foreign matter.

• Handling problems vary. Some are simple, some complex. Some involve numerous steps — and when various steps can be combined in a single system, handling efficiency goes up and handling costs come down.

For this chemical plant, S-A engineers recommended the REDLER Elevator and Conveyor system shown. Elevating chemical from the bin is a job made to order for a REDLER. Its compactness saves space... its gentle en-

masse movement of materials without breakage assures safety, speed and low cost... its sealed casing prevents contamination.

Feeding the chemical to three processing machines is another REDLER job — this time with a horizontal closed circuit unit that re-circulates unused material until used by the machines.

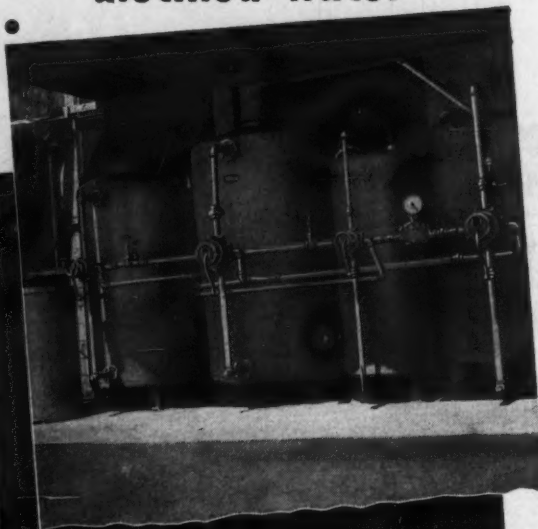
Find out how REDLERS can aid you... Write for REDLER Catalog No. 140.

**STEPHEN S-ADAMSON**  
11 RIDGEWAY AVENUE, AURORA, ILLINOIS MFG. CO. LOS ANGELES, CALIF. ★ BELLEVILLE, ONT.

*Designers and Manufacturers of All Types of*  
BULK MATERIAL HANDLING EQUIPMENT

When inquiring specify CP A2030... see information request blank, pgs. 2-3

## De-ionized water replaces distilled water



Typical plant installation of De-ionizing Unit

At 1% to 10% of the cost of distilled water, ILLCO-WAY De-ionizing Units are daily producing pure water comparable to that obtained by distillation. The installation pictured above (aircraft plant, 3,000 gph) is typical of the ILLCO-WAY equipment that has been purchased by industrial, chemical and pharmaceutical plants for obtaining high-purity water. Lower operating costs of De-ionizing often pay for the installation in a few months, and these savings continue for the long life of the unit. . . . No fuel, no cooling water required, no periodic dismantling for cleaning. Flow rates up to 500,000 gph.

ILLINOIS WATER TREATMENT COMPANY  
849-5 Cedar Street, Rockford, Illinois



**PORTABLE LABORATORY UNIT**  
12 gallons of pure water per hour.  
Quality of water comparable to  
that produced by distillation.  
Daily meeting exacting standards  
of industrial, chemical, univer-  
sity, city and state laboratories.

Water Treatment Engineering



When Inquiring specify CP A2081 — see information request blank, pgs. 2-3

## PRODUCTION

### Resin Gives "Steam Set" Inks Finer Water Tolerance Balance

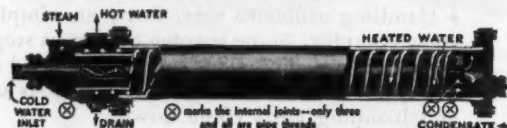
*Hard high melting resin with infinite solubility in diethylene glycol; excellent humidity tolerance and resistance to hydrocarbons*

**Uses** — Many foods such as butter, lard, bread and milk show tendencies to pick up residual odors in printing inks. Selection of inks that avoid these difficulties is therefore important. Steam set inks widely used on paper bottles, folding box cartons and food wrappers to meet desired requirements do not oxidize or utilize a solvent which must be driven off. Further improvement in such inks particularly in their carefully balanced water tolerance is of interest. Improved stability on press rolls is also a factor.

**Description** — This recently developed synthetic resin binder for the ink maker gives a carefully balanced water tolerance. It is known as "Amberol" 820. This synthetic binder is a hard, high melting resin which demonstrates infinite solubility in diethylene glycol, excellent humidity and high tolerance to petroleum and hydrocarbons. Steam set inks which feature elimination of offset, lack of odor, extreme cleanliness and brilliance of color, no-rub characteristics and good sealing properties consist of pigment, resin binder and an odorless, high boiling organic solvent. In order to function properly, the resin binder must be soluble in the solvent and a mixture of the solvent and a limited quantity of water. When a film on the varnish formed

IF IT'S **HOT WATER**  
YOU WANT

### THE JOHNSON *Instant* HEATER



● In sheer heating ability the Johnson "Instant" Heater has set the pace for many years. The illustration shows how its ingenious design routes water first inside, then outside, the steam heated chamber — secures faster, greater heat transfer for a unit of its size. Note, too, the simple, rugged construction, which eliminates any need for reducing valves; you can hook the Johnson Heater right up to your high pressure steam lines. Used for a wide variety of applications; available in complete range of sizes and capacities.

Write for new bulletin

THE  
**Johnson Corporation**

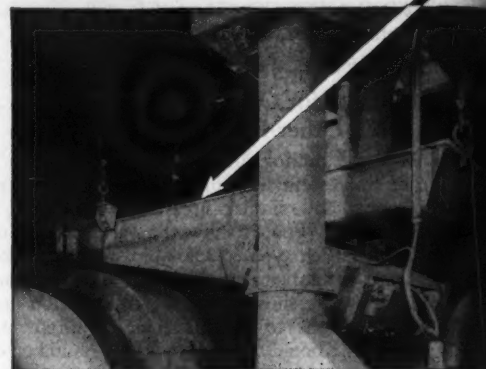
826 WOOD STREET, THREE RIVERS, MICHIGAN

When Inquiring specify CP A2082 — see information request blank, pgs. 2-3

## SYNTRON

"Vibra-Flow"

### VIBRATORY FEEDERS



### FINGER-TIP RHEOSTAT CONTROL OF MATERIAL FLOW

Capacities of from OUNCES to TONS per hour  
Illustrated folder available on request

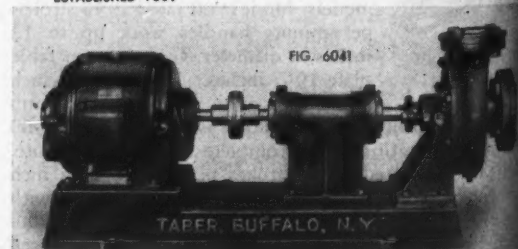
SYNTRON CO., 110 Lexington Ave., Homer City, Pa.  
When Inquiring specify CP A2033 — see information request blank, pgs. 2-3

## Meets Your **OPERATING CONDITIONS**

This flexible "general-use" Taber Centrifugal Pump serves especially well in the processing industry. The pump is easily adapted to many jobs because several impellers are available for the same size casing or several size casings for the same yoke. Oversize ball bearings, extra shaft diameter, deeper stuffing box, conservative rating... and final testing to meet your operating conditions... will keep you sold on this Taber "general-use" Pump.

Please write, on your letter-head, for the helpful **BULLETIN CL-339**

**TABER PUMP CO., 320 Elm St., Buffalo 3, N.Y.**  
ESTABLISHED 1859



**Taber Pumps** for Higher  
Practical Performance

When Inquiring specify CP A2034 — see information request blank, pgs. 2-3



JUST **RIGHT** FOR LIQUID CHEMICALS

## SARAN\* PIPE and FITTINGS

Non-corrosive . . . resistant to acid and solvents . . . Saran Pipe and Fittings find many practical uses in up-to-date chemical plants and laboratories. Tough and flexible—Saran meets all standard pipe specifications—yet weighs only 1/4 as much as iron pipe. Saran is entirely unaffected by water and resists heat up to 175° . . . It's easy to install. Available sizes: 1/2 to 4 inches I. P. S.

Ask for full details. Write today!

ACADIA DIVISION  
WESTERN FELT WORKS  
4035-4117 Ogden Ave., Chicago 23, Ill.  
Branch Offices in All Principal Cities  
\*Licensee of the Dow Chemical Co.

**ACADIA Synthetic PRODUCTS**  
Processors of Synthetic Rubber and Plastics  
Sheets • Extrusions  
Molded Parts

When inquiring specify CP A2035 — see information request blank, pgs. 2-3

## PREVENTS ACCIDENTS and SPLASHING!



### SAFEGUARDS EMPLOYEES!



MADE IN 3 SIZES  
5 Gallon Size (1 1/4" to 2 1/4")  
Standard Size (2 1/4" to 3") 10 to 15 Gallons  
Large Size (3 1/4" to 3 1/2") Special Hook.  
These dimensions are outside diameters.  
Send for literature "CEP"

- Prevents accidents caused by splashing and carelessness.
- Uninterrupted flow.
- Air vent eliminates pumping or syphoning.
- Made of hard, acid-proof rubber.
- Soft rubber cuff permits drainer to be attached to carboys.
- All parts are replaceable.

**WAHLERT PRODUCTS CORP**  
INDUSTRIAL SAFETY AND FIRE EQUIPMENT  
27 LAFAYETTE ST., BROOKLYN, N. Y.

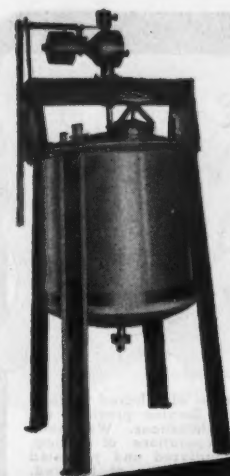
When inquiring specify CP A2038 — see information request blank, pgs. 2-3

## PRODUCTION

from this resin and solvent is subjected to an unlimited quantity of water, a thin hard film is formed over the underlying portion which is plastic and adheres to the paper. The formation of this hard surface prevents any offset or transfer of ink from the printed surface. "Amberol" 820 is soluble in ethylene glycol, butanol, ether alcohols and aqueous ammonia. It is also soluble in ethanol but precipitates as the solution ages. It is insoluble in water and alicyclic and aromatic hydrocarbons. It is compatible with the various Carbowaxes, Zein and certain types of urea formaldehyde resins. The resin is prepared by dissolving in diethylene glycol with heat to give clear solution. The method of preparation has little or no effect on the final vehicle and the heating schedule selected can be altered on the basis of convenience. A typical formula utilizes 100 pounds of "Amberol" 820 and diethylene glycol and requires heating for approximately ten minutes at 300° F. to obtain a clear solution. The resin shows no tendency to separate even after several months storage. Steam set inks containing this resin are distinguished by their carefully balanced water tolerance. They are stable in the press rolls under humid conditions prevailing during steam set printing, yet they break sharply when subjected to a jet of steam. The hard protecting layer precipitated by the excess water in its final form by the time the freshly printed sheet leaves the press. No subsequent oxidation or polymerization occurs.

RESINOUS PRODUCTS & CHEMICAL CO., Dept. CP,  
222 W. Washington Square, Philadelphia, Pa.

When inquiring specify CP A2037 — see information request blank, pgs. 2-3



Stainless steel coil heated mixing kettle. One of a wide variety of stainless steel and alloy vessels manufactured by S. Blickman, Inc. to withstand severe operating conditions in the processing industries. Photo 7017

Why **MAXIMUM**  
**CORROSION RESISTANCE**  
depends on  
control during fabrication

It requires more than mere accuracy in following blueprints to build your processing equipment with the corrosion resistance required for your job.

Stainless steel and alloy metals may lose some of their valuable properties during fabrication. The way they are handled in welding, bending and forming determines how much of their resistance to corrosion your finished vessel will possess. It is important, therefore, that your equipment be properly fabricated by experienced craftsmen. Proper fabrication will give you equipment having maximum corrosion resistance and, consequently, longer service life.

S. Blickman, Inc. has specialized in the fabrication of corrosion resistant metals for many years. Our shop procedures are constantly checked and carefully controlled to guard the properties required in your vessel. When you turn your job over to us, you can be sure of equipment with maximum service life and lower maintenance costs. Consult with us on your next job.

S. Blickman, Inc., 705 Gregory Ave., Weehawken, N. J.

**S. BLICKMAN, INC.**  
Guards Alloys in Fabrication

A request on your letterhead will bring our guide, "What to Look For When You Specify Stainless Steel for Your Processing Equipment."



When inquiring specify CP A2039 — see information request blank, pgs. 2-3

## New REFRIGERATION CATALOG

No refrigeration engineer, designer, serviceman or purchasing agent should fail to write for our newest Refrigeration catalog. It's free—and chock-full of detailed data on the multitude of refrigeration parts that are both original installation and replacement items. For information or literature write or phone any Weatherhead branch office.

**Weatherhead**  
THE WEATHERHEAD COMPANY, CLEVELAND 8, OHIO  
Branch Offices: New York, Philadelphia, Detroit  
Chicago, St. Louis, Los Angeles

When inquiring specify CP A2036 — see information request blank, pgs. 2-3

# NATIONWIDE INFRARED SERVICE

Specialists in the application of Infrared Radiant Energy, Fostoria Industrial Service provides the experience of over 3,000 installations. With complete technical facilities, operations of baking, drying, dehydrating are analyzed and pretested to accurately forecast the benefits of Infrared. Call Fostoria for "know-how" utilization of Infrared and sound engineering recommendations.

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Gives you fundamental information about Infrared — and Fostoria Even-ray Systems. Case history information applicable to your operation will be included if you send us general facts about your potential use.

## THE FOSTORIA PRESSED STEEL CORPORATION FOSTORIA, OHIO

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EXPORT SALES DEPT. —  
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Highest Efficiency  
in the Utilization of  
INFRARED RADIANT  
ENERGY



## PRODUCTION

### Linseed Varnish Oil Speeds-Up Polymerizing Time 5 Times

*Low acid value, improved quality; heated to 505° F.  
upon cooling acquires Z - 5 viscosity body  
without further heating*

**Uses** — Linseed varnish oil; polymerizes in such a short time that it can be regarded as spontaneous.

**Description** — This new linseed oil features spontaneous polymerization, low acid value. Ordinary linseed varnish oils, depending upon the origin of the flaxseed, may be bodied to a Z-5 viscosity (Gardner-Holt scale) at a temperature of 590° F. in from 5-7 hours. So-called fast bodied linseed varnish oils have subsequently reduced the necessary time from 35 to 40%. This new oil, known as "Kelvitrol," polymerizes in such a short time that it can be regarded as spontaneous. A number of production cooks have been made in two drum open units with interesting results. "Kelvitrol," heated to 585° F. and removed from the fire rose to 605° F. and upon cooling had acquired a Z-5 viscosity body without further heating. In another test the oil was pulled from the fire at 580° F. The temperature rose to between 590 and 595° F. and with very little further heating had acquired a Z-5 body. (Regular varnish oils at this low temperature would ordinarily require over eight hours cooking to acquire the same body.) **Description** — "Kelvitrol" has a light color and approximately half the acid value of similar oils with long cooks, plus highly improved waterproofness of film. The acid value of "Kelvitrol" at a Z-5 body is approximately 8. The refining processes through which the oil is put imbue it

## NETTCO Agitating Equipment



### NETTCO DRIVE No. 6

Fully enclosed drive, with gears operating in oil bath. Sealed against grit, liquids and fumes. Drive ratios 1 to 1, 2 to 1 or 3 to 1. One of many types of Netcco Agitator Drives.

Standardized NETTCO parts and drives are used to produce a wide range of stirring equipment. NETTCO can supply the proper size and type of mixer to meet your specific needs. Let us know your requirements.

**NEW ENGLAND  
TANK & TOWER CO.**

93 TILESTON STREET EVERETT 49, MASS.

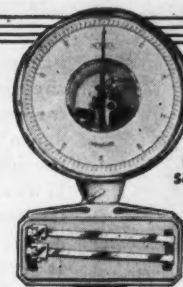
When Inquiring specify CP A2041 — see information request blank, pgs. 2-3

FOR

*hairline*

WEIGHT READINGS

**KRON SCALES** made by **YALE**



Yale-made  
Scale with  
capacity

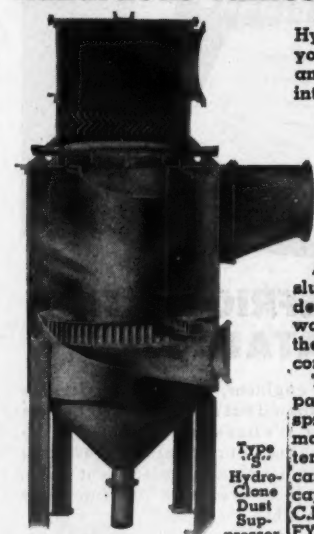
Yale-made Kron Scales assure hairline readings in weighing, counting, batching, measuring, testing. They erase hidden costs — speed operations, save materials, reduce production costs. The springless dial mechanism is in a swivel head that can be rotated — point-of-view differences are eliminated. Catalog pictures all models from bench to crane scales and wide range of capacities available. Get your copy.

**THE YALE & TOWNE MANUFACTURING CO.** Philadelphia Division, 4330 Tacony St., Philadelphia 24, Pa.

WRITE FOR  
CATALOG

When Inquiring specify CP A2042 — see information request blank, pgs. 2-3

## How to Suppress hazardous fumes and fine dust



A new Type "S" Whitening Hydro-Clone will suppress your hazardous industrial dust and fumes. Through the integrator sections the dust is completely knocked out of the air stream. Exhaust fan handles only clean air. The units are also used with two or more stages of disintegrator sections for fine cleaning.

All the dust is reduced sludge, which drains into dewatering tank, and water is recirculated through the Hydro-Clone, which completely self-cleaning.

The absence of moving parts, screens, cloth bags, spray nozzles eliminates maintenance. Air or gas temperatures up to 1200° F. can be cleaned. Available capacities from 2000 to 3000 C.F.M. Write for Bulletin FY-110 and FY-114.

Type  
Hydro-  
Clone  
Dust  
Sup-  
pressor.

**WHITING  
CORPORATION**  
15667 Lathrop Ave.  
Harvey, Illinois

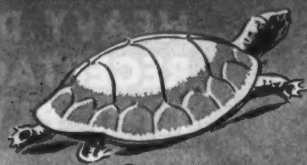
"Wetting is True  
Suppression"

When Inquiring specify CP A2043 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

When Inquiring specify CP A2040 — see information request blank, pgs. 2-3





## INCHING

Slow speed for inching, threading and close inspection of work in process is but one example of the versatility of Reliance Motor-Drive. In addition, it can be the means of: smooth, controlled acceleration—automatic reversing and quick stopping—control of tension—tandem operation. With Reliance Motor-Drive, these functions can be provided electrically, eliminating such mechanical devices as gears and gears.

For proof that motor-drive is *more than power*, ask for Bulletin 311, showing applications of this all-electric, adjustable-speed drive for A-c. circuits.

**RELIANCE ELECTRIC & ENGINEERING COMPANY**  
1415 IVANHOE ROAD CLEVELAND 10, OHIO  
SALES OFFICES IN PRINCIPAL CITIES

When inquiring specify CP A2044 — see information request blank, pgs. 2-3

## QUICKER HEATING

- Small Size
- Light Weight
- One Moving Part
- Low Price

OVER  
400,000  
SOLD

Sold by more than 100 Mill Supply Distributors throughout the U. S. A. See your supply house or write for Catalog T-1738

**YARNALL-WARING CO.**, 125 Marmalade Ave., Phila. 18, Pa.

# YARWAY

## IMPULSE STEAM TRAP

When inquiring specify CP A2045 — see information request blank, pgs. 2-3

JUNE, 1945

## PRODUCTION

with the ability to polymerize in approximately 20% of the time required for regular linseed varnish oil. Although war-time conditions control the output of this product, permission has been granted to distribute test quantities to organizations in the protective coatings field who wish to conduct experiments of their own.

**SPENCER-KELLOGG & SONS, INC.**, Dept CP, 100 Delaware Ave., Buffalo 5, N. Y.

When inquiring specify CP A2046 — see information request blank, pgs. 2-3

## Ultraviolet Sterilizer Lamp

*Streamlined design easily installed in work areas above eye level*

**Uses** — For air disinfection, in plant and office working areas.

**Description** — This redesigned model differs from the original having been streamlined. It employs a G.E. Germicidal tube to project intensified ultra-violet rays across working areas, above eye level. A scientifically designed reflector provides both optimum intensity and diffusion of the rays that are lethal to airborne bacteria. The unit may be recessed into wall, or wall or ceiling suspended. Because more than 85% of the ultraviolet energy output of this new unit is of the germicidal wave length (2537 Angstroms) it will assist in combating abscesses caused by cross infection. Information on "Hygeaire" on request.

**AMERICAN STERILIZER CO.**, Dept. CP, Erie, Pa.

When inquiring specify CP A2047 — see information request blank, pgs. 2-3

## SAVE TIME AND MONEY

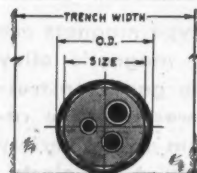
*on your next underground insulated piping installation by specifying*



## Ric-wil

PREFABRICATED  
INSULATED  
PIPE UNITS

**Reduce Excavation and Backfill to a minimum**



### SINGLE CONDUIT

Size	O.D.	Trench Width
6"	7 1/4"	1' 6"
8"	9 1/4"	1' 8"
10"	11 1/4"	1' 10"
12"	13 1/4"	2' 0"
15"	16 1/4"	2' 4"
18"	19 1/4"	2' 6"
21"	22 1/4"	2' 9"

Ric-wil Insulated Conduit is shipped to you in 21-ft. lengths complete with pipes and insulation as specified—ready to lower into narrow shallow trenches. Field labor is reduced 75 to 80%, and since excavation and backfill are kept to a minimum, installation interferes little or none with other construction, and can be completed in record time. Table at left shows trench dimensions for a single conduit. Structural strength of conduit is adequate to stand up safely under highways with 1 to 2 ft. of cover above top of unit.

### GET THE ORIGINAL — SPECIFY Ric-wil

Write for Ric-wil catalog No. 44, describing Ric-wil conduit systems of all types and containing typical specifications and installation data.

**Ric-wil** INSULATED CONDUIT SYSTEMS  
THE RIC-WIL COMPANY, CLEVELAND, OHIO

When inquiring specify CP A2048 — see information request blank, pgs. 2-3

**Designed  
to give  
Streamline  
Flow**



## CRANE STANDARD IRON BODY WEDGE GATE VALVES

### WORKING PRESSURES:

**125-lbs. Steam; 200-lbs. Non-Shock  
Cold Water, Oil, or Gas**

Designed with maximum port openings, these valves eliminate the common problem of turbulent flow and pressure drop—a serious hindrance to piping performance in many systems. In all sizes, the inside diameter of ports is never less than that of body seat rings.

Other typical advantages are: uniformly strong body sections; true-travel disc with full-length guides; extra deep stuffing box that lengthens packing life; and the Crane non-binding Tee-head disc-stem connection.

### THIS FOLDER GIVES YOU THE FACTS



Ask your Crane Representative or write us for folder AD-1584 describing this complete family of Crane Iron Body Wedge Gate Valves. They're made in Non-Rising Stem, OS&Y, Quick-Opening, Underwriters' and Marine Cargo patterns; with flanged, screwed, or hub ends; in 2 to 12 in. sizes. If you want valves that work better and last longer in any recommended service, here they are!

**CRANE CO.**, 836 S. Michigan Ave., Chicago 5, Illinois  
Branches and Wholesalers Serving All Industrial Areas

For anything in Piping Materials, Call CRANE!

# CRANE

VALVES • FITTINGS • PIPE • PLUMBING • HEATING • PUMPS

When inquiring specify CP A2049 — see information request blank, pgs. 2-3

Covering a World of Uses with

# CHIKSAN



land and sea and in the air... wherever liquid, air or vapor lines must swing or turn to provide for movement of equipment, vibration or easy handling... CHIKSAN Ball-Bearing Swivels render safe, dependable service.

## CHIKSAN FORMULA FOR PERFECT FLEXIBILITY

$$BB_1 + EP = \frac{LT}{P/V}$$

CHIKSAN Ball-Bearing Swivels swing or rotate with minimum torque because all turning takes place on double rows of ball bearings. Self-adjusting pack-off is equally effective for both pressure and vacuum. There is nothing to tighten or adjust.

Over 500 different Types, Styles and Sizes assure the correct Swivel for every purpose: For temperatures to 700° F. in High Temperature Joints and for pressures to 3,000 lbs. in High Pressure Styles. Sizes range from 3/8" to 12" ... or larger to order.

Representatives in Principal Cities.  
Distributed Nationally by Crane Co.



**CHIKSAN COMPANY**  
BREA, CALIFORNIA

BALL BEARING  
SWIVEL JOINTS  
FOR ALL PURPOSES

When Inquiring specify CP A2050 — see information request blank, pgs. 2-3

## PRODUCTION

### Starting Coil Quickly Thaws Frozen Salt Bath Furnaces

*Dropped in bottom of pot prior to shutdown or used after furnace has frozen-up*



COIL at top of pot starting to melt frozen salt

**Uses** — For simplifying handling of freeze-ups of electric salt bath furnaces which usually require extensive time and trouble in starting up.

**Description** — A recently perfected starting coil consists of a nichrome heating element connected to the output leads of the furnace transformer by two mild steel bars and flexible bases, and operates in conjunction with the transformer. The coil can be used either before or after the salt in the furnace has been allowed to freeze up.

When the furnace is to be shut down, the coil is dropped into the salt bath so that it reaches the bottom of the pot. The power can then be shut off and the furnace allowed to freeze up. The leads are connected to the transformer and the power turned on when furnace is to be started again. Due to the starting coils and the normal heat from the electrodes themselves salt is soon melted down. If salt has been allowed to freeze up solid without placing



**NIAGARA PERMAFLUX** spout type magnets are built of Alnico, the strongest magnetic alloy known. Their exclusive "double gap" construction with recessed surface insures effective removal of magnetic impurities from a wide variety of products. Because they require no electrical current and have no moving parts to wear out they furnish dependable and economical protection.

Write today for descriptive literature.

**RICHMOND MFG. CO.**  
LOCKPORT, N. Y.

When Inquiring specify CP A2051 — see information request blank, pgs. 2-3

## HEAVY DUTY RECEPTACLES AND PLUGS



**VAPOR TIGHT  
WATER TIGHT  
AND  
EXPLOSION PROOF**

Tested in service in shipyards, airports, stadiums and industry, Russell and Stoll fixtures and fittings have proved with prestige for more than forty years.

The "know how" of design, precision production and careful inspection of R & S products meet all requirements of moisture, dust or explosion hazards.

The heavy duty angle type receptacle and plug illustrated is standard in ratings 10 to 400 amperes and single or four pole. Ask for the 300 page R & S catalog.

Since 1902



**RUSSELL & STOLL COMPANY**  
EXPLOSION-PROOF, WATER-TIGHT AND EVER-LOCK RECEPTACLES, PLUGS, CONNECTORS, SWITCHES AND Fittings  
125 BARCLAY STREET - NEW YORK 7, N. Y.

When Inquiring specify CP A2052 — see information request blank, pgs. 2-3

## MAKE MANPOWER MORE PRODUCTIVE...

Add Faster Handling Methods with "WELD-BILT" Equipment



"Weld-Bilt" experience and knowledge of materials handling methods and equipment has added valuable hours to production

operations in many plants — by cutting time and labor in handling methods. A careful survey of your operations, adaptation of standard equipment or designing of new equipment, may promise similar savings for you! Write for details.

"Weld-Bilt" Hydraulic Lift Truck. Handles heavier loads easier. Built for strength, mobility and durability. Exclusive Horizontally-Mounted hydraulic unit. Capacities, 2500 to 10,000 lbs.

## WEST BEND EQUIPMENT CORP.

225 WATER STREET, WEST BEND, WISCONSIN  
MATERIALS HANDLING ENGINEERS

Hydraulic Lift Trucks, Two and Four-Wheel Trucks, Towing Machines, Skid Platforms, Barrel Trucks and Racks, Portable Elevators and Special Equipment

When Inquiring specify CP A2053 — see information request blank, pgs. 2-3



## PRODUCTION

coil in the bath, salt at the top of the pot is chipped to provide a nest for the coil, (see illustration). The salt is then poured in until the coils are about half covered. Leads of the starting coil are connected with transformer and current turned on. Melting of salt is automatic and the coil gradually works downward until all salt in pot is molten. Furnaces put back in operation without delay. No additional equipment is required.

WATSON ELECTRIC FURNACE DIV., Dept. CP, 7450 Livestock Ave. at Green, Detroit 17, Mich.

When inquiring specify CP A2054 — see information request blank, pgs. 2-3

## Shop Coat Has Many Adjustable Features; Gripper Fasteners

*Sleeves may be snapped tight around wrists or easily rolled up; back is "action" pleated*

As a general shop coat, materials, design and features being based on suggestions received from workers in various industrial fields.

Some of the innovations embodied in these new work coats are: new type gripper fasteners that launder and do not come off; button-up collar that can also be a down collar; adjustable double sleeves that can be snapped tight around the wrists or opened and rolled-up.

**Description** — All pockets are double stitched and tacked, and side pockets have flaps, but so made that they may be tucked in. "Action" pleated back with yoke shoulders and adjustable belt. The new shop coat is easy to launder and made of material that has been severely tested. It is available in color.

ANVASS PRODUCTS CORP., Dept. CP, Fond du Lac, Wis.

When inquiring specify CP A2055 — see information request blank, pgs. 2-3

## Neoprene Spats and Leggings

*Protect workers against hazards of acids, caustics, oils and greases*



Spats and Leggings

**Uses** — For protection against acids, caustics, solvents, oils, fats, and greases.

**Features** — Neoprene is used to impregnate these spats and leggings. Both types are quickly and easily put-on.

**Description** — These protective leggings and spats are highly resistant to acids, caustics, etc. They are made of closely woven cloth and impregnated with Neoprene.

The finished product is a cloth of silver color. The spats and leggings are amply cut to cover the shoe all the way to the floor. On the spat, a leather strap with buckle adjustment passes under shoe, and double-reinforced snap fasteners hold the cuff snugly. Two positions of the fasteners accommodate fullness or tucked-in pants leg. The leggings have strap and snap fasteners, and a flexible metal band is sewn-in to hold the wrap around at its full height of 14 inches.

SECURITY RUBBER CO., Dept. CP, Carrollton, Ohio.

When inquiring specify CP A2056 — see information request blank, pgs. 2-3

# The Economical Insulation

# PC FOAMGLAS

*You will find that PC Foamglas can be cut to fit around projections and openings right on the job, with ordinary tools. The big, strong, rigid slabs, conveniently packaged, can be handled and laid quickly and easily.*



**I**N the long run, you will find this cellular glass material the most economical insulation you can use. Why? Because the insulating properties of PC Foamglas are permanent.

While the insulating efficiency of many insulation materials deteriorates with age, PC Foamglas goes on year after year without loss of its original insulation value. Being glass, it is impervious to moisture, acid atmospheres, fumes, and vapors. It is verminproof, fireproof.

On roofs and equipment, in floors and walls, PC Foamglas has maintained predetermined temperature and humidity levels. It prevents condensation. Can

you think of any other insulation that does all these things — permanently?

In all sorts of plants, all over the country, PC Foamglas is in increasing demand among men who are facing insulating problems. Freedom from repairs and replacement alone is prime proof of its ability to keep insulation costs down.

When you are considering insulation, be sure to check other materials against PC Foamglas. For complete information, just fill in and mail the convenient coupon. We shall be glad to forward free copies of the booklets you select. Pittsburgh Corning Corporation, 632 Duquesne Way, Pittsburgh 22, Pa.

• Also manufacturers of PC Glass Blocks •



This concrete floor, insulated with PC Foamglas, prevents heat travel from the room below. A concrete wearing floor will cover the PC Foamglas.



This re-roofing job includes permanent insulation. Roofers have found that they can safely recommend PC Foamglas to the most exacting plant managers for the toughest insulating jobs. PC Foamglas retains its original insulating value—indefinitely.

### CHECK THESE PROPERTIES OF PC FOAMGLAS:

1. Permanent insulation
2. Vermin- and vaporproof
3. Fireproof
4. Waterproof
5. Light weight
6. Easy installation
7. Rigid structure
8. Economical

FIRST COST IS LAST COST



Pittsburgh Corning Corporation  
Room 635, 632 Duquesne Way  
Pittsburgh 22, Pa.

Dear Sirs:

Roofs..... Walls..... Floors.....  
Please send along my free copies of the booklets I have checked. It is understood that I incur no obligation.

Name.....  
Address.....  
City..... State.....

## PC FOAMGLAS *Waterproof Fireproof* INSULATION

U.S. PAT. OFF.

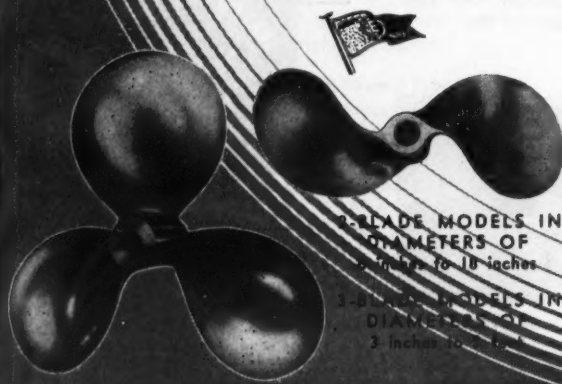
—When inquiring specify CP A2057 . . . see information request blank, pgs. 2-3—

# Smooth VIBRATIONLESS MICHIGAN MACHINED-PITCH PROPELLERS

## For MIXING or AGITATION

Available in a wide range of sizes, models and metals to ideally suit practically every requirement . . . whether for original equipment replacement or special application. Made by our exclusive "Machined-Pitch" method which means that they are absolutely accurate as to pitch, balance and blade spacing. This assures less "whip" on the shaft and less wear on connecting couplings and motors. **FREE CONSULTIVE ENGINEERING SERVICE.**

Write for complete details and prices NOW!



### MICHIGAN WHEEL CO.

232 Market Ave., S. W., Grand Rapids 3, Mich.

When Inquiring specify CP A2058 — see information request blank, pgs. 2-3

## PRODUCTION

### Automatic Carton Sealing Unit

*Low cost unit offers automatic features; no handling of filled cartons by workers*

**Uses** — Together with automatic carton feeder these carton sealers provide straight line production from filling, through simultaneous top and bottom sealing, to shipping containers, all without any operators.

**Description** — This carton sealing unit incorporates automatic features in a low cost, adjustable sealing machine. All handling of filled cartons is eliminated, and no operators are required. The machine is ideally suited for sealing cartons containing most non-free flowing products. The carton feeder automatically inserts one carton into each carton pusher compartment of the sealing machine, assuring maximum production at the most economical machine speed. A variable speed control adjusts the machine speed to actual requirements. The feeder and sealing machine are easily and quickly adjustable for a large variety of carton sizes. Complete details on request.

CONTAINER EQUIPMENT CORP., Dept. CP, Newark, N. J.

When Inquiring specify CP A2059 — see information request blank, pgs. 2-3

### Steel Blueprint Cabinets for Industrial Requirements

*Made in two sizes; sections may be placed one on top of the other; choice of open or closed base*



STEEL fire resistant cabinet.

less adequate means of storing these valuable records. These steel cabinets now available are especially designed to provide safe, convenient storage for such important papers. The cabinet has a rigid frame for continuous perfect alignment of drawers. All drawers and compartments within drawers are equipped with hinged paperweights in front and protecting hoods in rear, insuring contents remaining flat at all times. The drawers are equipped with attractive handles and label holders, and can be divided in many different ways. Partitions are standardized and interchangeable. Sections may be placed on top of the other and either a sanitary (open) or closed base may be used. No finishing top is required. Cabinets are finished in maker's own shade of green baked enamel. Cabinets are available in two sizes — No. 2225-12 — 40 x 23 — 3/4 x 17 and 44 x 33 — 3/4 x 13. Either type base at nominal cost. Catalog 331 gives complete information.

LYON METAL PRODUCTS, INC., Dept. CP, Aurora, Ill.

When Inquiring specify CP A2060 — see information request blank, pgs. 2-3

# SABIN<sup>One-Man</sup> TRUCK

## for DRUMS, BARRELS

**SHIPPED ON APPROVAL**

Type L-3

### AN AMAZING TIME AND LABOR SAVER!

Up to 800 lb. drum or barrel loads are easily handled by one man. No manual lifting. No weight to carry. Load moves easily on roller bearings. Third-Wheel Feature adds to ease of loading, gives better load support and balance. **SEND TRIAL ORDER.**

**PRICE \$33.50**

with semi-steel roller bearing wheels.

WRITE FOR FREE BULLETIN

The Sabin Machine Co.  
6536 Carnegie Ave.  
Cleveland, Ohio

When Inquiring specify CP A2061 — see information request blank, pgs. 2-3



**New working efficiency  
for hands exposed to  
harmful materials**

## Stanzoil Gloves now have new really non-slip finish

This new finish on Stanzoil actually grips wet slippery objects more firmly than bare hands can — result, more efficient work . . . in greater safety from hand accidents, saving you lost time and costly injury claims. Made of DuPont neoprene, as processed by Pioneer, Stanzoil out-wear rubber 3 to 7 times, resist damage by oils, acids, caustics — are highly flexible, safe for sensitive hands, as hundreds of industries know. All needed styles, sizes, weights — black or white. For better safer work and economy, write today for Stanzoil facts.



Synthetic Rubber Division  
**THE PIONEER RUBBER COMPANY**  
239 Tiffin Rd., Willard, Ohio, U.S.A.  
New York • Los Angeles

OVER 25 YEARS OF QUALITY GLOVE MAKING

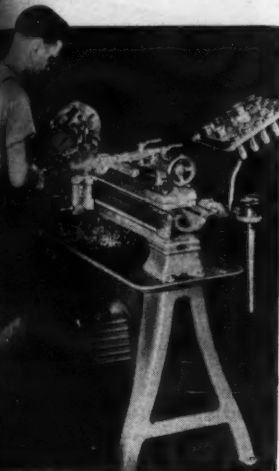
When Inquiring specify CP A2062 — see information request blank, pgs. 2-3



## SOUTH BEND

### 10-INCH PRECISION LATHE

and design and careful workmanship give South Bend lathes the dependable precision that assures uniform accuracy at all times—that makes possible greater production on the most exacting of machining operations. In Toolroom, Turret, and Engine Lathe types.



In addition to the 10" lathe shown here, South Bend Lathes are made in four other sizes, 9" to 16" swing. Write for catalog.

#### SPECIFICATIONS

Swing Over Bed . 10 1/2"  
Collet Capacity . . . 1"  
Bed Lengths . 3', 3 1/2', 4'  
Spindle Speeds (12) . .  
... 50 to 1357 r. p. m.  
Thread Cutting Range  
(48) 4 to 224 per inch.

**SOUTH BEND LATHE WORKS**  
Lathe Builders For 38 Years  
439 E. MADISON ST., SOUTH BEND 22, INDIANA

When inquiring specify CP A2063 — see information request blank, pgs. 2-3

## PATTERSON



(PATENTED)

LIQUID MIXERS  
DRY BLENDERS  
AUTOCLAVES  
PROCESS VESSELS  
CHEMICAL AND  
PROCESSING  
EQUIPMENT

ENGINEERED  
**NEW**  
PERFORMANCE  
IN FASTER —  
BETTER MIXING!

THE  
**CENTRI-CONE**  
LIQUID MIXER

**THE PATTERSON FOUNDRY  
AND MACHINE CO.**  
EAST LIVERPOOL, OHIO, U.S.A.

When inquiring specify CP A2064 — see information request blank, pgs. 2-3

## PRODUCTION

### Compact Dust Collector Uses Filter of Coated Paper

*Filter's efficiency quickly restored by peeling of  
two layers of paper*

**Uses** — This unit type dust collector attaches to grinders, buffers, sanders, polishers, lathes and other machines by means of simple attachments.

**Features** — Compact in size it readily fits behind or beside machines as they stand. Completely enclosed unit.

**Description** — Dust laden air is drawn through the inlet pipes into twin cyclone separators where it is whirled around at high speeds. The dust particles being heavier than air naturally move more slowly and drop down into dust drawer. The lighter air passes on through a viscous coated filter where fine dust is removed. Clean air is discharged back into the room. The two 3 in. diameter inlets can serve either one or two machines. The filter consists of 20 layers of coated filter paper. To restore the filter's efficiency it is only necessary to peel off the first two layers. This can be done five times without effecting its cleaning ability. Under average conditions a filter lasts approximately a year. 500 cubic feet of air per minute is developed through the two inlets by a 3/4 HP motor, 3450 RPM. It drives a 7 1/2 in. diameter by 2 inch wide squirrel cage blower wheel. Dimensions 20 x 20 x 38 inches high. Bulletin on request.

IDEAL COMMUTATOR DRESSER CO., Dept. CP, Sycamore, Ill.

When inquiring specify CP A2065 — see information request blank, pgs. 2-3

### 2 P. M. PRODUCTION AT 8 A. M.



#### THE SCHAUB DRAINTROL

guarantees quick morning heat-up and peak machine production all day long.

This inexpensive drainage device will give you such rapid warmup (without opening any by-passes) that your 8 A.M. temperature at the machine will equal your normal 2 P.M. temperature.

By constantly discharging AIR and CONDENSATE as soon as they form, the Draintrol speeds the circulation of steam, and assures a steady supply of heat at the machine. This means increased production without stoppage, as the machines get hot quickly in the morning, and hold a steady temperature all through the day! Write today for full information.

**Fred H. Schaub Engineering Co., Inc.**

327 W. Huron St., Chicago 10, Illinois

When inquiring specify CP A2066 — see information request blank, pgs. 2-3



## Machines That Turn Out Precision-Made Wire Cloth

**NEWARK**  
for ACCURACY

**I**f woven wire is to be used for screening there's every reason to insist upon accurately made cloth. If cloth is not precise in its mesh or space, of what use is it as screening medium?

NEWARK FOR ACCURACY is not an empty phrase. From the machines in our modern factory, comes wire cloth that cannot be surpassed for its accuracy in every detail — wire gauge, mesh, space, crimping. Quality is evident throughout the entire range of NEWARK Wire Cloth.

## Newark Wire Cloth Company

336 Verona Avenue Newark 4, N. J.

When inquiring specify CP A2067 — see information request blank, pgs. 2-3

## DEFY CORROSION at small cost

### BUILD YOUR PRODUCT WITH EVERLASTING FASTENINGS

Your product must stand up in use. In many cases it will meet the destructive forces of rust and corrosion.

Foretell trouble! Use Harper Everlasting Fastenings. They're made of either brass, naval bronze, silicon bronze, copper, Monel or stainless steel. They defy rust and corrosion . . . and do it at small cost.

To be sure . . . a bronze bolt costs more than a common steel one . . . but not much more. In most instances, constructing a machine or an instrument with non-ferrous or stainless fastenings adds only pennies to the total cost. Percentage wise, the added expenditure is negligible. But the life of the product . . . the ability to "take it" . . . the probability of freedom from trouble are increased beyond measure.

#### 4360 ITEMS IN STOCK

Harper is known as "Headquarters for Non-Ferrous and Stainless Fastenings" . . . carries large and complete stocks of 4360 different items and is continually adding others. Write for 1945 Catalog.

#### THE H. M. HARPER CO.

2544 Fletcher Street  
Chicago 18, Illinois

BRANCH OFFICES: New York City  
Philadelphia • Los Angeles  
Milwaukee • Cincinnati • Houston  
Representatives in Principal Cities

**HARPER**  
EVERLASTING FASTENINGS

BRASS • BRONZES • COPPER  
MONEL • STAINLESS

When inquiring specify CP A2068 — see information request blank, pgs. 2-3

## PRODUCTION

### Detachable Metal Hose Flange

Designed for repeated re-use; in sizes for flexible hose of 2, 2½ and 3 in. I.D.



HOSE FLANGE in place

**Description** — This detachable flange is made in sizes for hose of 2, 2½ and 3 inch I. D. An instruction folder showing each assembly step photographically is available to those interested, upon request. Important among the steps explained are: cutting hose — about 1¾ in. shorter than length of completed unit required; installing split end-ring at open end of braid; applying flux, then solder; applying companion flange; criss-cross tightening of bolts.

PACKLESS METAL PRODUCTS CORP., Dept. CP, New Rochelle, N. Y.

When inquiring specify CP A2080 — see information request blank, pgs. 2-3

### Unit Converts Grease Container into 25 Lb. High Pressure Gun

Manually operated; dispenses light cup grease or viscous type; develops 5000 psi pressure



MODEL  
1266

GREASE PUMP for 25 lb. containers.

vert an ordinary original grease container into a twenty-five pound high pressure grease gun. Identified as Model 1266 "Handi-Luber" it is sturdily built and furnished with a five foot hose assembly with hydraulic coupler for contacting fittings. No transfer of grease is necessary when this unit is used. Complete information will be sent on request.

LINCOLN ENGINEERING CO., Dept. CP, 5701 Natural Bridge Ave., St. Louis 20, Missouri.

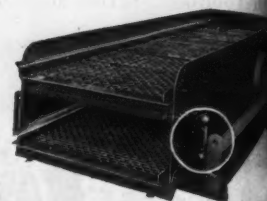
When inquiring specify CP A2070 — see information request blank, pgs. 2-3

**Uses** — As detachable flange for helical flexible metal hose.

**Features** — Design permits repeated re-use. The assembly operation is simple and time saving and only ordinary shop tools are required. No brazing is required. No gasket is employed to connect the flange to the hose, thus making a metal to metal seal.



...It's a  
**SECO**



### Positively Controlled Gyration Action Puts Every Inch of Screen to Work

On every chemical screening job you get important results such as increased capacity due to sharper whip, minimum of blinding and closer, surer grading. Dependable, time proven Seco Screens are on the job everywhere.

Extra Tough Screening Job? Seco Patented Auxiliary Vibrator enables efficient screening of damp, sticky materials.

Send Today for Free Catalog Dept. E

**SECO**

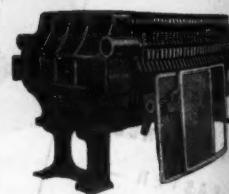
SCREEN EQUIPMENT CO., INC.  
9 Lafayette Avenue, Buffalo 13, N. Y.

When inquiring specify CP A2071 — see information request blank, pgs. 2-3

10 OR 10,000 G.P.H.  
For Any Filterable  
Material at Any  
Temperature or Pressure

Whether you want to filter a half pint per minute in your laboratory or 200 gallons per minute on plant scale, you can depend on the Shriver Filter Press to supply everything you're looking for in speed, ease and economy of operation, regardless of the nature of your product and the necessary temperature or pressure required to clarify or thicken the slurry or to recover solids, wash, extract or dry them.

The Shriver Filter Press is the "old stand-by" in years of service but distinctly modern in its extent of application. No filtering equipment offers more in performance at lower cost in more processing fields. It can fit into your production



set-up and Catalog No. 4 tells how. Built for any capacity, of any metal, wood, rubber or plastics; stationary or as portable units complete with pump and piping in any desired arrangement.

Write to T. Shriver & Company, Inc., 846 Hamilton St. Harrison, N. J.

**Shriver**  
FOR BETTER FILTERING  
**FILTER PRESSES**

When inquiring specify CP A2072 — see information request blank, pgs. 2-3



OTS

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Action  
Workimportant  
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the jobAuxiliary  
icky mate, INC  
13, N.Y.

k, pgs. 2-3

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wood, m  
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million S

R.S.

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pgs. 2-3

VIEW

## COMPRESSED AIR DRIED TO BELOW ZERO DEWPOINTS

- For instrument lines
- For process work
- For inspection and assembly departments

Kemp Adsorptive Dryers  
are the standard in modern  
industrial applications.

For Bulletin T25C write  
The C. M. Kemp Mfg. Co.,  
405 East Oliver Street,  
Baltimore 2, Maryland.

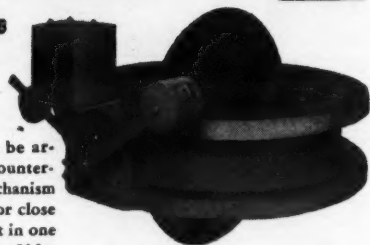


## KEMP of BALTIMORE

When inquiring specify CP A2073 — see information request blank, pgs. 2-3

## Solenoid Trip Valve EMERGENCY INSURANCE!

No. 625



The solenoid can be arranged with the counterweight or spring mechanism (optional) to open or close the valve and hold it in one position or the other. If for any reason the solenoid functions, the latch is tripped, which permits the counterweight to open or close the valve by gravity. The assembly is suited to shut off the flow or to open a vent and requires manual reset. Can be constructed of any metal or alloy and in various sizes for air, gases, steam, oil, hydraulic and other services. 15 to 900 psi. Write for details and Catalog No. 14-B.

VALVE DIVISION

RS PRODUCTS CORPORATION • 4531 Germantown Ave. • Phila. 44, Pa.

Streamlined  
BUTTERFLY VALVES

When inquiring specify CP A2074 — see information request blank, pgs. 2-3

MAY-JUNE, 1945

## PRODUCTION

### Face Shields Offer Choice of Three Button Windows

*Clear cellulose acetate, 24 mesh screen, fibre with  
filter glass window*

**Uses** — Face and eye protection of workers engaged in grinding, buffing, sanding and similar operations.

**Description** — The selection offered here includes four different models. This company also has introduced three types of button-on windows for the shields: cellulose clear acetate for general purposes; 24 mesh screen for heat protection; and fibre with a filter glass window for welding and scarfing. The face shields are light, comfortable and sturdily built. All parts are interchangeable. The AO-F-100 shield has an adjustable elastic headband which may be worn low on the head for additional comfort. Genuine leather sweatbands, like the windows, button on and are easily removed. Fibre head piece holds the device comfortably and firmly on the head. Shield may be instantly thrown up when not in use. Model F-200 is similar but has a spark deflector. F-300 is also similar but back headband is fiber construction. The long band slides within a fiber sleeve in back permitting easy adjustment. F-400 has all features of the 300 type plus a full spark or head deflector. This semi-skull guard protects forehead.

AMERICAN OPTICAL CO., Dept. CP, Southbridge, Mass.

When inquiring specify CP A2075 — see information request blank, pgs. 2-3



- Because Multiwall Paper Bags are easy to handle, they save manpower and help reduce labor costs. These bags empty clean. They save material and reduce retention losses. Tight, sturdy Multiwalls also prevent siftage and infestation losses.

Find out how Multiwalls can save money and materials for you. Write for full information TODAY.

St. Regis  
**MULTIWALL**  
PAPER BAGS  
MULTIPLY PROTECTION • MULTIPLY SALEABILITY  
ST. REGIS PAPER COMPANY  
TAGGART CORPORATION

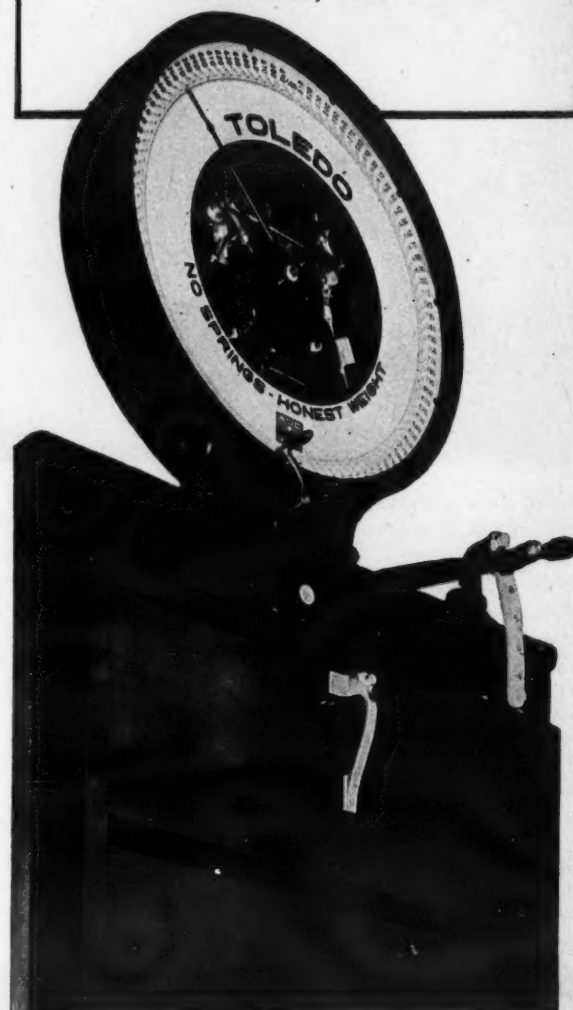
NEW YORK 17: 230 Park Ave.  
BALTIMORE 2: 2601 O'Sullivan Bldg.

CHICAGO 1: 230 No. Michigan Ave.  
SAN FRANCISCO 4: 1 Montgomery St.

When inquiring specify CP A2076 — see information request blank, pgs. 2-3

## World's most widely used Dial Scales

- Accurate, rapid, reliable!
- Whatever your requirements are for weighing, counting, weight-recording, batching, force-measuring... Look to Toledo! Toledo Scale Co., Toledo 12, Ohio.



**TOLEDO**  
HEADQUARTERS FOR SCALES

When inquiring specify CP A2077 — see information request blank, pgs. 2-3

# CORROSION PROBLEMS?

Try Worthite Super-Stainless



**CORROSION RESISTANCE.** Acids: Acetic, Chromic, Citric, Fatty, Formic, Hydrochloric (Cold dilute), Nitric, Phosphoric, Sulphuric, Sulphurous.

**SALTS:** Acid and alkaline solutions.

**FRUIT JUICES:** All kinds.

**FOOD PRODUCTS:** All kinds.

**ALKALIES:** Potassium Hydroxide, Sodium Hydroxide, Black Liquor, Sulfides, Brines, Lime, Bleach, etc.

**References:** Worthington Bulletin W-350-B4B. Chemical & Metallurgical Eng. Materials of Const. Sept. 1944. Reprints of recent papers and articles on special applications sent on request.

**ABRASION RESISTANCE.** Exceptionally good in handling most salt crystals and fine abrasive solids carried in suspension as slurries on filter pressing and transfer service.

Typical slurries handled in Worthite Centrifugal Pumps: Aluminum Sulfate, Ammonium Nitrate, Ammonium Sulfate, Black Liquor and Salt Cake, Brines, Electrolytic Tank House

Slimes, Ferrous Sulfate, Glaubers Salt, Lime Slurry, Milk of Lime, Phosphates, Pigments, Rouge and Emery, Potassium Chloride, Sodium Chloride, Sugar.

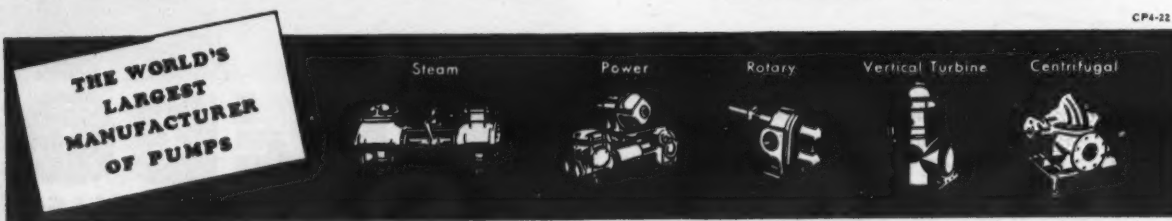
**Reference:** Worthington Bulletin W-350-B6.

**PHYSICAL PROPERTIES.** Strong, Ductile, Tough, Machinable—Repairs by Welding and Metallizing.

\*Subject, of course, to wartime delays.

Worthington Pump and Machinery Corporation,  
Centrifugal Pump Division, Harrison, N. J.

**WORTH BEHIND THE NAME**  
**WORTHINGTON**



When inquiring specify CP A2078 . . . see information request blank, pgs. 2-3

## PRODUCTION

Plastic and Wood Link Mats for  
Safety, Comfort in Work Areas

*Plastic mat does not swell to any extent when  
exposed to oils; wood link mat dovetail  
design for assembly to width desired*

**Uses** — Meets wide range of requirements in industries where use of mats in work areas is indicated. This solid plastic friction type mat may be used advantageously in many places where rubber mats were formerly used.

**Features** — This mat lays flat and affords a non-slip surface. It can be trimmed to fit small or odd-shaped areas.

**Description** — This solid, plastic friction type mat is made by firmly binding friction compound together by a plastic sheet. It is jet black in color and comes in 29" x 63" x 9/16" sheets. It does not swell as rapidly as rubber when exposed to oils. It may also be used in building entrances on ramps, etc.

**Uses** — The wooden link mat also produced by this company also has many features that make it particularly suitable for work areas.

**Features** — It is substantially constructed of a hardwood species of lumber. The links are firmly held together by a rust-resisting, galvanized steel spring wire framework. Light in weight. Natural wood color.

**Description** — Maximum width in single pieces 42 inches. Any width in two or more pieces is made possible by an ingenious dovetail device construction. Length — any length practical for handling.

AMERICAN MAT CORP., Dept. CP, 1798 Adams St., Toledo, Ohio.

When inquiring specify CP A2079 — see information request blank, pgs. 2-3

Plastics Preform Heat Unit is  
Entirely Automatic

*No dials, buttons; closing drawer starts operation  
output is 400 watts*



Compact plastics unit measures  
15 x 23 x 29 inches.

**Uses** — Designed and built especially as a production unit for the plastics molding industry. Actual production tests over a wide variety of materials show this unit will raise the temperature of 1/3 of a pound of average material to 170 degrees F. in one minute.

**Features** — There are no dials, no timing, nor even a push button. Closing

the preform drawer all the way it automatically turns on the high frequency power and timer. At the end of the prescribed time the red indicating light goes out and the operator transfers the heated preforms to the mold cavity of the press.

**Description** — A distinguishing touch to this unit is its brilliant red top. It weighs only 250 pounds and is 15 inches wide, 23 inches high and 29 inches deep. It will actually fit into the space usually left between presses.

CHEMICAL PREVIEW



## PRODUCTION

230 volt, 60 cycle, single phase current is used. The heating cabinet and removable 7 x 10 inch tray make this machine extremely practical and flexible. Upper electrode can be adjusted to a height of 2 1/4 inches above tray. Complete information on Thermex Red Head on request.

ANDLER CORP., Dept. CP, Louisville, Ky.

When inquiring specify CP A2080 — see information request blank, pgs. 2-3

### Combination Battery Charger

*For applications where both lead-acid and nickel-alkaline batteries are employed*

— To meet requirements of plants desiring a large capacity automatic battery charger for electric truck batteries.

Features — This combination battery charger has simplified controls, a d-c contactor and is capable of charging 30 nickel-alkaline or 24 lead-acid battery cells. It is identified the 145F1 charger and is designed specifically for applications when both lead-acid and nickel-alkaline batteries are employed.

Description — The charger is compact. It is 28 1/4 inches wide, 32 3/4 inches deep and 46 3/4 inches high. The internal control panel is clearly laid out so that even an inexperienced operator can make adjustments. Nameplates show the method for changing the charging rate, the one-step operation of line voltage adjustment and the battery adjustment. The d-c contactor prevents the batteries from discharging back through the charger after the a-c current has been turned off or fails. The charger automatically shuts off after the charge is completed.

GENERAL ELECTRIC CO., Dept. CP, Schenectady, N. Y.

When inquiring specify CP A2081 — see information request blank, pgs. 2-3

### Master Diamond Checking Set

*Penetrator and blocks made to extremely close tolerances; for use on all "Rockwell" instruments*

— This Master Diamond Checking Set checks accuracy of hardness testing equipment. It can be used on the maker's hardness testers and other instruments used for "Rockwell testing."

Description — The set consists of a gold plated diamond penetrator and two test blocks. The penetrator is carefully made to exceedingly close tolerances to give highly accurate measurements required for checking readings. Since it is designed to be used only for checking purposes, it retains its original accuracy for a long period of time. When checking, the master diamond penetrator replaces the regular penetrator in the machine. The same is true of the master test blocks. Held to extremely close limits, they are used only in connection with the master diamond. The resulting combination furnishes a very accurate check of the machine, either as a periodical measure or whenever readings may be in doubt. The set is furnished ready for use in a fitted case. Further details on request.

LARK INSTRUMENT CO., INC., Dept. CP, 10200 Ford Road, Dearborn, Mich.

When inquiring specify CP A2082 — see information request blank, pgs. 2-3

For complete information regarding products described in this issue a handy request slip is provided between pages 2 and 3. Check the items that interest you, fill in name and address and send it to publishers. Information will come to you promptly.

MAY-JUNE, 1945

## THE JUDGMENT OF LEADERS IS ALWAYS SIGNIFICANT

The judgment of leadership, in what seems to be dominating percentage, is that WILSON Pulsafeeders (chemical proportioning pumps), are outstanding for handling metered flows of liquids, in large and small production.

Kind and quantity are seldom a limiting factor, because WILSON Pulsafeeders handle chemicals of high or low viscosity, acids and volatiles, as well as slurries. In most instances, accuracy is guaranteed at better than 1% of 1%, and capacity may range from 1 cph. to 600 gph. or more. Flow may be mono or multiple.

Today, WILSON Pulsafeeders are serving magnificently in chemical laboratories, in food and other processing industries, and in water and sewage treatment all over the world. They operate on automatic settings, manual control, or a combination of both.

They are amazingly dependable. They have no leak-likely packing glands, and they have those patented, flexible diaphragms which operate against an inert liquid to obviate breakage. (See sketches) and then send for details of our cooperation in engineering WILSON Pulsafeeders to your requirements. We always welcome inquiries.

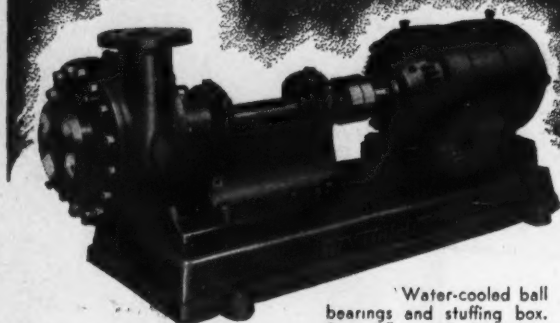
ALSO } LIQUID FILLING MACHINES  
MFRS. } AND DRY CHEMICAL FEEDERS

**WILSON** CHEMICAL FEEDERS, Inc.  
207 CLINTON STREET (P. O. Box 998) BUFFALO 4, N. Y.  
EST. 1923 . . . WITH EXPERIENCE IN ALLIED LINES SINCE 1914

When inquiring specify CP A2083 . . . see information request blank, pgs. 2-3



*For pumping -*  
**ACIDS · HYDROCARBONS  
 CONDENSATE · CAUSTICS  
 ORGANIC LIQUIDS  
 DOWTHERM · DIPHENYL  
 SLUDGES · BLACK LIQUOR**



Water-cooled ball bearings and stuffing box. Sizes 1" to 6" discharge.

## Quick Facts About DAYTON-DOWD PROCESS PUMPS

**WATER-COOLED BEARINGS**—Dual wall construction of bearing housings provides a water cooling chamber area, keeping all bearings cool when pumping high temperature liquids. Bearings are individually enclosed in a cartridge type housing, assuring positive and permanent alignment.

**WATER-COOLED STUFFING BOX**—A water-cooled chamber surrounds the eight rows of packing in the deep, long stuffing box. Provides extra protection when pumping high temperature liquids.

**NEW IMPELLER AND CASE DESIGN**—Ample impeller clearance is provided in this new pump design to efficiently and effectively handle any liquids that may contain crystals, grit, abrasives and sludges.

**EXCEPTIONALLY HIGH HYDRAULIC EFFICIENCY**—The inherent design characteristics of these single-stage, single-suction type pumps account for their exceptionally high operating efficiency. They provide reliable operation at low maintenance cost. Available with either enclosed or open impeller.

**CRITICAL METALS MINIMIZED**—Only the casing, two side plates and the impeller comprise the pump-end. Saves critical metals and lowers cost of corrosion-resisting construction.

**FREE CATALOG**—Write on your business letterhead for interesting FREE Catalog. Address: DAYTON-DOWD COMPANY, Quincy, Illinois.

**DAYTON-DOWD**  
 COMPANY  
 QUINCY, ILLINOIS  
 Offices in Principal Cities

**CENTRIFUGAL AND TURBINE PUMPS**

When inquiring specify CP A2084 — see information request blank, pgs. 2-3

## PRODUCTION

### Packless Leakproof Transmission for Level Controllers and Valves

*Replaces conventional outboard packing box*

**Uses**—This packless joint replaces the conventional outboard bearing packing box and is available on the maker's liquid level controllers, lever and solenoid operated valves.

**Features**—The outstanding feature is its leakproof construction which recommends it for use with volatile and inflammable liquids. The diaphragm seals-off the leakage, there is no leaky shaft or stem packing with which to contend, no packing nuts which need be taken-up. Minimum friction, thrust is carried by the outer half of the ball rocking in the socket of the housing cover. Construction assures accurate transmission of the slightest effort. There is straightlined power wherever the transmission unit is used.

**Description**—The unit consists of a diaphragm, a ball in halves with extended stems, a housing base and cover which provides the socket in which the ball rocks. Housing base is threaded for mounting. Diaphragm is cloth inserted synthetic rubber or other composition. Float boxes, float and lever tank units and valves equipped with the transmission are limited to pressures not to exceed 300 pounds and maximum temperatures of 450 degrees F. Standard construction consists of bronze housing, housing cover and lever bracket, stainless steel ball and stems. Other alloys are available. When the unit is used on a controller other than a float box or valve, a guide is mounted on housing cover to prevent side sway of the float. Bulletin giving detailed description, illustrating

## AN URGENT MESSAGE from the UNITED STATES GOVERNMENT

To the Shippers of America:  
 Freight transportation is today in the most critical condition since the start of the war. 1945 is the third consecutive year in which transportation has exceeded the trillion ton-mile mark. American transportation is being called up to do this gigantic job despite constant inroads on equipment and manpower due to military demands. Railroads have 600,000 less freight cars than they had during the first World War. Well over 300,000 skilled railroad workers have already gone into the armed forces. The worst weather conditions in half-a-century has further handicapped the speedy handling of vitally-needed freight.

There is little likelihood that the situation will materially improve during the entire year. There is no way at this stage of the war of getting more materials or manpower to increase transportation capacity or even to maintain present efficiency. We must make what we have do the job. Every American shipper must do his part.

As a shipper dependent on transportation for the movement of raw materials into your plant and the finished goods to the consumer you have a vitally important part in the solution of this problem. Complete freight car utilization is the only solution.

On the battlefronts American airmen recognize the importance of enemy rail lines and transportation systems will not only "high priority" targets. We on the home front must remember that full utilization of our transportation system will be a direct and tangible contribution to Victory.

There are many practical methods by which greater car utilization can be achieved. Undoubtedly, your company has already put some of these into effect. However, we ask you to again review your freight set-up and make such additional improvements as are possible. Because efficient production cannot be achieved without efficient transportation the War Production Board wholeheartedly endorses and joins the Office of Defense Transportation in this urgent plea.

*J. M. Johnson*  
 Director, Office of Defense Transportation

• New and improved applications of Signode Steel Strapping to specific problems are being made constantly. They contribute directly to the purposes stated by the Director of Defense Transportation: Fuller utilization of freight car capacity—adjustment of loads to different types of cars, trucks and ships—stowage and bracing to avoid damage—rapid loading and unloading to avoid tie-up of urgently needed rolling stock.

**SIGNODE**  
 STEEL STRAPPING COMPANY

2666 N. Western Ave., Chicago 47, Ill.  
 Brooklyn, N. Y.: 351 Furman St.  
 San Francisco, Calif.: 477 Bryant St.

When inquiring specify CP A2085 — see information request blank, pgs. 2-3

## MAKING RECORDS



for  
**High Quality,  
 Speedy,  
 Uniform  
 FILTRATION**

### SPARKLER "Horizontal Plate" FILTERS

Under the Sparkler process you obtain maximum clarity and purity in your chemicals for minimum outlay. All the material to be filtered is cleared and no unfiltered residue ever remains.

Sparkler units are highly adaptable, have longer filtering cycles, are sturdily built, economical to own and operate. Plates are interchangeable and easy to clean.

Our field engineers are at your service.

**SPARKLER  
 MFG. COMPANY**  
 243 Lake Street  
 MUNDELEIN, ILLINOIS



Exposed view of Sparkler Filter without housing.

When inquiring specify CP A2086 — see information request blank, pgs. 2-3



**NO PACKING**—The resilient diaphragm isolates working parts from the flow, and seats tight against weir for absolutely leakproof closure. No wiredrawing to worry about. Maintenance consists of occasional replacement of diaphragm—a matter of minutes and pennies. Enjoy the time, money and labor-saving benefits of one of the simplest, most revolutionary valves ever designed. Ask for CATALOG No. V-44.

For control of acids, alkalis, gases, semi-solids, volatile and viscous substances, slurries, water, air, etc. For pressures to 150 psi.

Maximum recommended temperatures, standard valves 180° F.; others to 220° F. Sizes to 1/2" to 14" both screwed and flange. Handwheel and lever operated types... air, motor or chain operated.

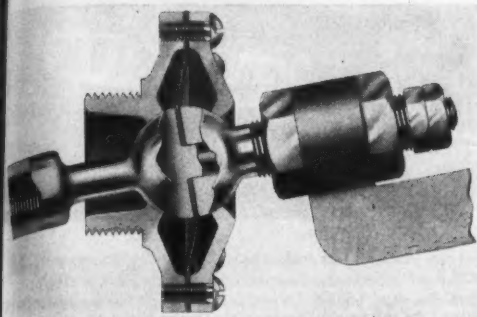
**HILLS-McCANN COMPANY**  
 2370 W. Nelson St., Chicago 18, Ill.  
**HILLS-McCANN Diaphragm Valves**  
 SAUNDERS PATENT

Proportioning Pumps—Force-Feed Lubricators—Chemical Valves  
 Air & Water Valves—Marine Valves—Magnesium Alloy Castings

When inquiring specify CP A2087 — see information request blank, pgs. 2-3



## PRODUCTION



TRANSMISSION . . housing, ball, etc.

various assemblies and listing boxes, float and lever tank units, lever and solenoid valves equipped with this transmission available on request.

AVIS REGULATOR CO., Dept. CP, 2541 S. Washington Ave., Chicago 8, Ill.

When inquiring specify CP A2088 — see information request blank, pgs. 2-3

## Electronic Heater for Metal Working Applications

*Can be adapted without use of radio frequency transformers*

Uses — For brazing, soldering, annealing, hardening and reforge heating applications.

Features — With a low-loss coupling arrangement, this electronic generator can be adapted to a wide variety of metal working applications without the use of radio frequency transformers. Predetermined automatic timing controls each unit operation, assuring uniform production quality. The operator pushes the start button, and when the operation is completed, the unit automatically shuts off.

Description — Other features of the AC electronic heater include a current limiting circuit for protecting the oscillator filament and prolonging tube life; a three phase rectifier on larger size units to obtain maximum power and prevent unbalance of the power line; safety devices for full protection of operator and unit. The units are compactly built and have a modern streamlined appearance. All models having a capacity of 10 or more kilowatts operate from either 220 or 440 volts, three phase supply.

ALLIS CHALMERS MFG. CO., Dept. CP, Milwaukee, Wis.

When inquiring specify CP A2089 — see information request blank, pgs. 2-3

## Stop Clocks & Impulse Timers

A bulletin on electric timers describes table model stop clocks, also wall models; precision chronoscopes, combination timers and impulse counters, stop watch controllers, and spring wound X-Ray timers. These timers have wide application in industrial and laboratory testing, such as in measuring start-to-stop intervals of relays and instruments and for checking sequence operations. Circuit diagrams are included to show correct methods of connecting the various timers in test circuits. Bulletin 1100 on request.

C. H. STOELTING CO., Dept. CP, 424 N. Homan Ave., Chicago 24, Ill.

When inquiring specify CP A2090 — see information request blank, pgs. 2-3

Where water supply is limited, use  
**SK BAROMETRIC  
MULTI-SPRAY CONDENSER**



**for Vacuum Cooking, Cooling or Drying • Crystallizing • Deodorizing • Oil Refining**

Although developed primarily to solve condensing problems where water supply is limited, the new SK Barometric Multi-Spray Condensers are also well suited for use where water temperatures are high in relation to vacuum requirements or where a large volume of non-condensable vapors must be removed.

Downward converging sprays of injection water insure thorough mixing with incoming vapors, prevent any pressure drop in the condenser chamber and will, in many cases, maintain an adequate vacuum under full load conditions without even using the air pump. Constant, uniform distribution of water spray in the condensing chamber eliminates possibility of vapor

by-passing condensing water. The design also permits a smaller, more compact condenser resulting in savings in space and supporting structure. A small pre-cooler attached to the condenser reduces air temperature, thus minimizing the amount of condensables that must be handled by the air pump. This assures economical operation of the air pump at all times.

Investigate the advantages of the new SK Multi-Spray Condenser. Full details are described in Bulletin 5AA Supplement.

**SCHUTTE & KOERTING COMPANY**

*Manufacturing Engineers*

1173 Thompson Street, Philadelphia 22 Pa.



JET APPARATUS • CONDENSERS AND VACUUM PUMPS • HEAT TRANSFER EQUIPMENT • VALVES • ROTAMETERS  
FLOW INDICATORS • GEAR PUMPS • STRAINERS • OIL BURNING EQUIPMENT • SPRAY NOZZLES AND ATOMIZERS • RADIAFIN TUBES

When inquiring specify CP A2091 . . . see information request blank, pgs. 2-3

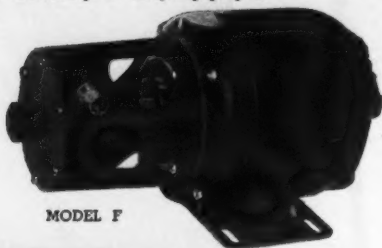
If you need . . .

## A SPECIALLY DESIGNED SMALL PUMP ask Eastern

A large part of Eastern's business is the designing and building of special pumps, in quantities ranging from 25 to several thousand for the aviation, electronic, chemical, machine and other special fields. Eastern builds over 300 models, both centrifugal and positive pressure, ranging in size from 1/30 H. P. to 3/4 H. P. as standard units. Model F, illustrated, is representative of standard Eastern pumps.

### SINGLE STAGE CENTRIFUGAL PUMP

A heavy duty compact pump designed for continuous operation in applications requiring sizable volumes or pressures with a minimum expenditure of space and weight. Available with either stuffing box or rotary seal. Pump and motor close-coupled. Open vane type impeller mounted directly on the motor shaft extension eliminates need of bearings in the pump proper.

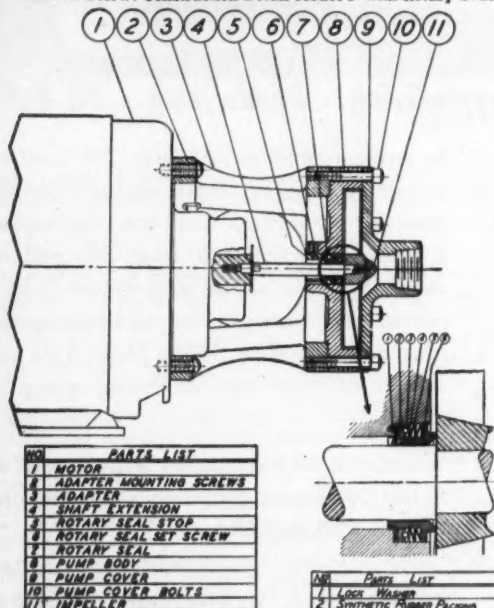


MODEL F



Size: 11 1/2" x 6 1/2" x 6 3/4"  
Weight: 35 lbs.  
Alloys: Available in Cast Iron, Bronze, Stainless Steel, Monel Metal and Hastelloy.  
Power: 1/3 H.P. in semi-enclosed, totally enclosed or explosion proof frames.

Shown below: Construction Detail Model F with Rotary Seal



**EASTERN ENGINEERING COMPANY**  
49 FOX STREET, NEW HAVEN 6, CONN.

When inquiring specify CP A2092 — see information request blank, pgs. 2-3

## PRODUCTION

### Puncture Tester For Corrugated Board — Redesigned Model

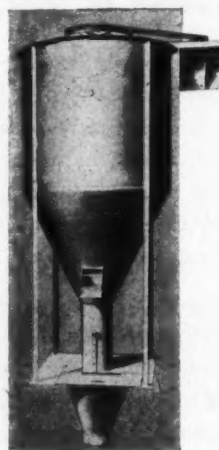
*Tests more diversified grades of board with greater accuracy*

**Uses** — Measures resistance to both puncture and bending of fibreboard, corrugated board, plywood and other types of container materials.

**Features** — This instrument was redesigned some months ago to incorporate changes recommended by the Institute of Paper Chemistry. Although the general lines and functions of the previous model are retained, the new tester is sturdier and safer, and capable of testing more diversified boards with greater accuracy.

**Description** — The main moving part is a pendulum from which extends an arm in the form of an arc of 90 degrees, at the end of which is fixed a triangular metal point one inch in height. The material to be tested is firmly held between two clamping plates. When pendulum is released, the metal point, the size and shape of which simulates the hazards encountered in actual shipping conditions, punctures the material. The energy dissipated is indicated in inch-ounces per inch of tear upon a calibrated scale. The improved model is mounted on a firm, cast-iron standard. The scale is now stationary and the pointer independent of the pendulum, thus minimizing the possibility of deflecting the pointer by jarring. Moreover, the stationary scale, with the pointer held at its correct scale value by a simple friction bearing, is easier to read. When auxiliary weights are mounted on the pendulum for test-

### A Worthy Addition to America's Most Complete Line of Mixers



#### SPROUT-WALDRON

### Style "V" MIXER

- ★ QUIET
- ★ RUGGED
- ★ COMPACT
- ★ ECONOMICAL

Completely assembled, except for motor and V-Belts. A one-man unit; requires minimum space and headroom. Its only moving part is dust-sealed. Low horse power. Low cost.

Write for  
Bulletin M-145

**SPROUT, WALDRON & COMPANY**  
155 Sherman St. Muncy, Penna.

When inquiring specify CP A2093 — see information request blank, pgs. 2-3

## HUNDREDS of FACTS about

in this  
new  
**FREE**  
booklet

### CORROSION

PROCESSES - FACTORS - TESTING  
— WITH DATA ON THE CHARACTERISTICS  
OF MONEL, NICKEL AND INCONEL  
— BASED ON  
MONEL AND NICKEL ALLOYS

What can you do when corrosion strikes at your equipment?

When metallic contamination threatens product purity?

This 54-page booklet explains how corrosion processes behave, discusses all the known factors which influence their action.

Textual material is supplemented by graphs, drawings and tables. A detailed review of testing methods tells how service conditions simulated in corrosion research, how the spool-type specimen holder is used for determining comparative behavior of metals and alloys under actual operating conditions.

The applicability of Monel, Nickel and Inconel in various corrosive media is analyzed in the closing section of **CORROSION**. Tables, nearly 500 typical corrosives in which these alloys have been successfully used, and report results of more than 120 specific tests on 44 common corrosive agents.

You'll find **CORROSION** a worthwhile booklet to have available. It's free . . . and a request on your letterhead brings it to you without delay.

**THE INTERNATIONAL NICKEL COMPANY, INC.**  
67 WALL STREET NEW YORK 5, N.Y.

### NICKEL INCO ALLOYS

MONEL • "K" MONEL • "S" MONEL • "R" MONEL • "KR" MONEL • INCONEL • "Z" NICKEL • SHEET • STRIP • ROD • TUBING • WIRE • CASTINGS • WELDING RODS (Gas & Electric)

When inquiring specify CP A2094 — see information request blank, pgs. 2-3

## THE SOLUTION FOR A-THOUSAND AND-ONE HEATING PROBLEMS—

### G-E CALROD HEATERS

(one of the popular G-E midget heaters)

The most widely used midget heaters on the market — use them for contact heating of metal surfaces, direct immersion in oil, alkaline baths, soft metals such as lead and solder. Cast them into iron and aluminum, or use them for industrial ovens, hot plates, etc. Extremely durable and efficient. Can be bent to almost any shape. Wide choice of sheath materials. For temperatures up to 1200 F., and a special, high-heat type for up to 1500 F. **PRICES FROM \$3.30.**

**SEND FOR GED-650**

This catalog will give you the complete story on Calrod heaters and other G-E midget heaters; also information to help you select quickly the midget heater or heating device best suited to your needs.

\*OTHER G-E HEATERS: FIN CALROD HEATERS, CALROD IMMERSION HEATERS, CARTRIDGE HEATERS, STRIP HEATERS, IMMERSION HEATERS, CONVECTION HEATERS, HEATING COILS

**GENERAL ELECTRIC**

When inquiring specify CP A2095 — see information request blank, pgs. 2-3



## PRODUCTION

heavy grades of container material, the zero of the can be checked quickly by removing the clamping springs, and handle, all of which comprise a sub-assembly. Furthermore, the release mechanism, now operating at the end of the pendulum rather than near its point of rotation, is so constructed that it latches the pendulum securely in a horizontal position.

GENERAL ELECTRIC CO., Dept. CP, Schenectady, N. Y.

When inquiring specify CP A2096 — see information request blank, pgs. 2-3

### Parallel Plate Capacitors For High-Frequency Electronic Oscillators

Complete information concerning parallel-plate capacitors for high frequency electronic oscillators is contained in the page illustrated bulletin. They are designed for use in the resonant circuit, or "tank circuit." When connected in parallel with an inductance coil, this class HFP, water-filled capacitor constitutes the resonant circuit which determines the frequency of the oscillator. Some of the features are: low losses at high frequencies; uniformly high dielectric strength; high current rating per unit volume; convenient mounting and connection facilities. These capacitors are available in standard ratings ranging from 2000 pfs to 0.025 microfarad to 9000 volts, 0.0056 microfarad. The capacitors employ a synthetic dielectric liquid which is particularly well adapted to high frequency applications. It is chemically stable. The capacitor unit is designed for water-cooling. Relatively small size is a great advantage. A manufacturer of electronic heaters is now saving three of these units to replace 25 mica units at savings of \$200 per heater. Bulletin GEA — 4365 on request.

GENERAL ELECTRIC CO., Dept. CP, Schenectady, N. Y.

When inquiring specify CP A2097 — see information request blank, pgs. 2-3

### Essential Oils, Flavors, Aromatic Chemicals

A catalog-price list recently issued by major producer of essential oils, flavors, oleo resins, vanilla, aromatic chemicals and related products and basic insecticide materials presents all this information in unusually handy form for ready reference. A partial list of the company's perfume formulas indicating various uses is given. Other sections cover essential flavors, dental and oral flavors, water soluble, dental and oral peptized oils. Copies on request.

EDGE & OLCOTT CO., Dept. CP, 180 Varick St., New York, N. Y.

When inquiring specify CP A2098 — see information request blank, pgs. 2-3

### Electronic Control Instruments

Control instruments and the electronic principal by which they are operated are given interesting and practical presentation in a twelve page illustrated catalog — Number 6300. A convenient, condensed listing of the company's principal items of equipment is provided. The publication describes the electronic principal by which control is effected without contact between measuring and control units of the instrument, and gives brief data and prices of indicating pyrometers and pyrometer controllers, indicating resistance thermometers and resistance thermometer controllers, in-out controllers, program controllers, portable potentiometers, combustion safe guards and thermocouples. Copies on request.

INSTRUMENTS CO., Dept. CP, Harrison & Peoria, Chicago, Ill.

When inquiring specify CP A2099 — see information request blank, pgs. 2-3

# TAKE A MEMO to the Safety Director



THIS is to let you know that I'm fully aware of the vital contribution your Safety Department has made — and is constantly making — toward the maintenance of our production schedules. I am happy to note that your recommendations have kept our labor turnover to a minimum, sharply reduced absenteeism and substantially lowered the incidence of accidents and disabling diseases. Keep up the good work!



Experienced Safety Men rely on PLY Creams and Liquids—and PLY-GARB Safety Clothing—for effective prevention of skin diseases in industry. You'll find the reasons when you get your copy of the newest edition of THE ANSWER TO INDUSTRIAL DERMATITIS... the authoritative handbook in the field. Write on your company letterhead for this booklet, without obligation.

## THE MILBURN COMPANY

3246 E. WOODBRIDGE • Detroit 7, Michigan

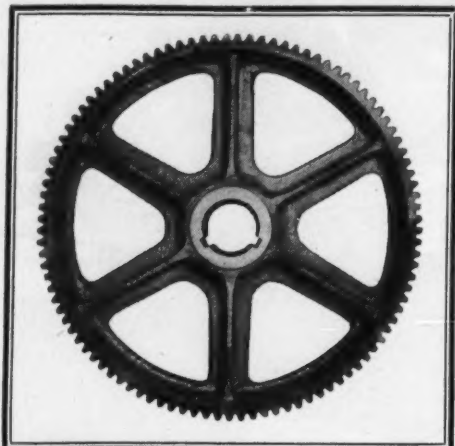
Manufacturers of PLY products and PLY-GARB safety clothing

PIONEERS OF SKIN PROTECTION IN INDUSTRY

When inquiring specify CP A2100 . . . see information request blank, pgs. 2-3

**D.O. James**  
ESTABLISHED 1888

## GEARS FOR INDUSTRY



D.O. James gears are products of an organization with over 57 years of gear manufacturing experience. Our extensive gear cutting facilities enable us to have a large capacity for making gears, of various types, for industry's many requirements.

*We make the following types of gears:*

Continuous-tooth Herringbone Gears—  
From 1" to 60" in diam. and up to 18" face  
Worm Gears—From 1" to 100" in diameter  
Helical Gears—From 1" to 60" in diameter  
Spur Gears—From 3/4" to 150" in diameter  
Spiral Bevel Gears—From 1" to 30" in diam.  
Bevel Gears—From 1" to 60" in diameter  
Racks—Cut in any required length.

Over a half-million square feet of floor space are devoted exclusively to gear manufacturing and contain the utmost in modern gear cutting equipment.

**D.O. JAMES  
MANUFACTURING CO.**  
1140 W. MONROE STREET  
CHICAGO, ILL.

MAKERS OF EVERY TYPE OF GEAR AND GEAR REDUCER

When inquiring specify CP A2101 — see information request blank, pgs. 2-3

## PRODUCTION

### Direct Contact Open Heaters

Bulletin just released is devoted to complete description open feed water heaters of various types. It illustrates and presents essential information on types of tray heaters for various applications, the jet heater, the V-Notch metering heater, also the convertible try type of heater, which by insertion of additional trays can be converted into a deaerator. The bulletin is illustrated showing various combinations of heater with storage tanks and is of interest to those concerned with heating water for boiler feed or process operations. Bulletin 4091.

COCHRANE CORP., Dept. CP, 17th & Allegheny Ave., Philadelphia 32, Pa.

When inquiring specify CP A2102 — see information request blank, pgs. 2-3

### Completely Automatic Self-defrosting System For Freezing Temperatures; No Brine Spray

A completely automatic self-defrosting method for temperatures below the frost line, without the use of lamps, electrical heaters, water spray or brine spray eliminates the human element from operation of low temperature refrigerating systems. The features of this equipment are fully explained in a six page two color, illustrated folder. This system holds an ever present quantity of heat instantly available for the defrosting operation. It is really a heat exchanger in combination with a "heat-hold" (anti-freeze solution) wherein heat from the hot gas is deposited or "banked" during the normal operating period of the refrigerating system and from which heat is withdrawn during the defrost cycle. The inner tank of the system is connected to the low side of the refrigerating system.

HANDLING + Processing + HANDLING + Assembling + HANDLING  
+ Packing + HANDLING + Storage + HANDLING



**PLANNED PRODUCTION** depends largely for its success on efficient materials *handling*. A handling operation starts each job, moves it along through processing and assembly to storage or shipment. Every other link in the chain of performance can rightfully be labeled "Handling." Write Towmotor Corp., Div. 7, 1226 E. 152nd Street, Cleveland 10, Ohio.

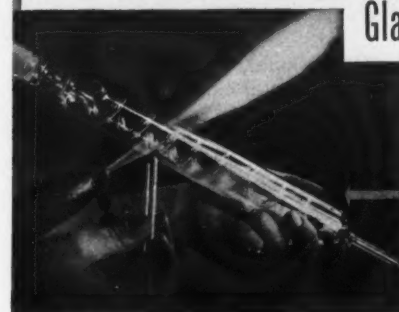
ASK FOR TOWMOTOR DATA FILE

**TOWMOTOR**

THE ONE-MAN-GANG

When inquiring specify CP A2103 — see information request blank, pgs. 2-3

## It Takes Years to Make a Glass Blower



There is no short course in glass blowing. For glass blowing is an art which requires special aptitude. In the past its secrets were handed down from father to son.

War has made severe inroads on our lamp shops where the hand fabrication of laboratory glassware is performed. Well over twenty per cent of Corning's glass blowers are in military service. Few could be replaced.

Despite such handicaps, lamp shop output has actually increased several fold. By working more shifts and longer hours, by adding new facilities and devising new ways of speeding production, the demands of the Armed Forces and war industries are being met. Soon, heavy war demands may ease. Then, will you no longer have to wait, and your requests for special apparatus can be met. Then, Corning can bring the new techniques and the advanced methods, war production has added to Corning Research in Glass.

"Pyrex," "Vycor" and "Corning" are registered trade-marks and indicate manufacture by

CORNING GLASS WORKS • CORNING, N.Y.

**PYREX** brand LABORATORY GLASSWARE

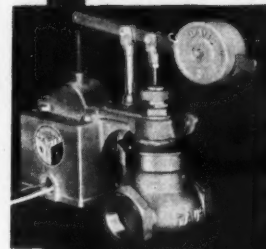
BALANCED FOR ALL-AROUND USE

When inquiring specify CP A2104 — see information request blank, pgs. 2-3

## DAVIS SOLENOID VALVES

*offer-*

Steam, Air, Water,  
Oil Applications,  
Extreme Accuracy  
Sizes 1/2" to 12"  
Pressures to  
1500 Lbs.



Davis No. 93 Single-Seated,  
Solenoid Valve. Sizes 1/2" to  
4", for gas, steam or liquid  
service.

Davis Solenoid Valves are operated by any device that will make or break an electrical circuit, and are furnished either normally open or normally closed — explosion proof if desired.

Davis valves adapted to solenoid operation include: single seated valves for high or low pressures, balanced valves, butterfly valves, and 3 or 4-way pilot valves. Reciprocating or rotary stem type. For extreme accuracy, the Davis Two-Step Solenoid Valve is available.

Write today for details

**DAVIS REGULATOR CO.**  
2562 NO. WASHTENAW AVENUE  
CHICAGO 8, ILLINOIS

Solenoid Valves  
available with the  
Dia-Ball leakproof,  
packless transmi-  
ssion unit.

When inquiring specify CP A2105 — see information request blank, pgs. 2-3



## PRODUCTION

Surrounding the inner tank is a hermetically sealed outer tank permanently filled with a non-corrosive, organic freeze solution. Heating coil is submerged in the solution and is connected between the compressor discharge side and the condenser inlet. The system known as "Thermobank" is housed in rigid steel shell and arranged for wall mounting. It can be used in any refrigeration system involving a compressor so long as electric current is available. It is produced in extremely small tonnage sizes and is also practicable for very large systems. Defrosting devices are mounted outside the refrigerated space. Minimum number of controls are employed and these are standard and understood by refrigeration men. Defrost drain pan is kept warm by special coil arrangement preventing ice build-up on water melted from pan. Drain line is also heated and size is kept to a minimum so copper tubing can be used in place of pipe. Bulletin TV-345U on request.

AMER-TRENTON CO., Dept. CP, Trenton 5, N. J.

When inquiring specify CP A2106 — see information request blank, pgs. 2-3

## Two Series of Resistors for Electronic and Other Equipment

Both pie wound to 1% accuracy; can be supplied with varnish coating containing fungicidal agent

— A few common applications for these resistors are voltage multipliers, laboratory equipment, radio and electrical test sets, calibration pads and electronic equipment requiring extremely accurate resistance components.

Features — Both

are pie-wound to 1% of accuracy. Specially enameled resistance wire is non-inductively pie-wound on non-magnetic ceramic bobbin which has a hole through the center for a number 6 screw. After being wound, the units are vacuum impregnated with a special varnish which provides additional insulation and thoroughly protects against humidity. The resistors can be provided with a varnish coating containing a fungicidal agent, thus making the units particularly suited for use in the tropics.

Description — Riteohm 82 is available in three sizes —  $1/16$ " diameter by  $1 1/8$ " long,  $1 7/16$ " long or  $1 3/4$ " long for the 2, 4, 6 pie units. The minimum resistance is .1 ohm for all units and the maximum is 400,000 for the large 2 pie unit, 750,000 ohms for the 4 pie, and 1 megohm for the 6 pie unit. The Riteohm 83 is available in three sizes: —  $1/2$ " diameter by  $7/16$ " long,  $3/8$ " long or  $1$ " long. The first two units are two pie, while the third is a 4 pie unit. The minimum resistance is 10 ohms for all units and the maximum is 200,000 ohms for the small 2 pie unit, 400,000 ohms for the large 2 pie, and 600,000 ohms for the 4 pie unit. Units may be mounted by means of a through bolt, No. 82 has two lug terminals one end firmly fastened by screws. No. 83 has radial wire leads. Bulletin 125 on request.

OHMITE MFG. CO., Dept. CP, 4835 Flournoy St., Chicago 44, Ill.

When inquiring specify CP A2107 — see information request blank, pgs. 2-3

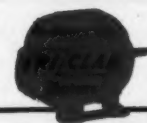
JUNE, 1945

# BOILED DOWN

## TO SIMPLIFY MOTOR SELECTION



• This new booklet gives ratings, sizes, characteristics, dimensions, where-to-use data, and prices of General Electric a-c and d-c motors, 1/16 to 75 hp. Everything you need to know to select these sizes—all in 16 pages!



Buy all the BONDS you can—and keep all you buy

To Save Your Time Later  
Mail This Coupon Today—

General Electric Company, Schenectady 5, N. Y.

Please send me a copy of your Condensed Motor Catalog (No. GEA-4281).

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Company.....

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City..... State.....

760-250-486

When inquiring specify CP A2108 . . . see information request blank, pgs. 2-3



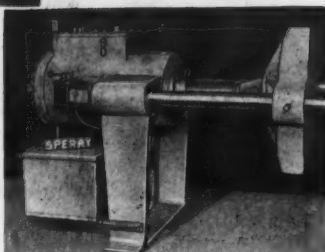
Woman operator making simple adjustments on the New Sperry EHC

The New Sperry EHC Closing Device requires only simple adjustments at two points. So easily operated that a girl operator can do the work.

This completely enclosed, electric-hydraulic unit provides positive, precise, yet simple press actuation, moving the head in both directions.

It fits any make press with minor alterations. On Sperry presses a mere substi-

## Easy... Does it WITH THE NEW SPERRY EHC Closing Device



Speed your filtration cycle with the New Sperry EHC Closing Device

tution of the crosshead is all that is necessary.

Write today for complete information

**D. R. SPERRY & COMPANY, Batavia, Ill.**  
Filtration engineers for over 50 years

## SPERRY FILTER PRESSES

Eastern Sales Representative, Henry E. Jacoby, M.E.  
205 E. 42nd St., New York 17, Phone: MUrray Hill 4-3581  
Western Sales Representative, B. M. Pilhashy  
Merchants Exchange Bldg., San Francisco 4, Calif., Phone: DO 0375

When Inquiring specify CP A2109 — see information request blank, pgs. 2-3

## UNIFORM DIAMETER TANK HEADS

★ We can take care of your requirements up to 60" in diameter in cold-formed, accurate, wrinkle free heads, in flanged and dished, ellipsoidal, obround, double dished, flat flanged in gauges up to 1/2". Also hemispheres and segments for spheres to 10' 6". Circular shapes available without die charges, are shown in our Shape Book No. 6. Don't design without this book! You can save expensive die charges with our standard shapes.

**THE COMMERCIAL SHEARING  
AND STAMPING COMPANY.**  
YOUNGSTOWN - OHIO - U.S.A.

When Inquiring specify CP A2110 — see information request blank, pgs. 2-3

## PRODUCTION

### Heating Coil or Drying and Processing Applications

*Coils feature all copper and copper alloy condensers;  
available on wartime priority applications;  
standard, steam blast, booster units*

**Uses** — These units are recent additions to maker's broad line of heaters and booster units to meet more specialized requirements of extended surface heating coils in modern air conditioning, heating, drying and processing systems. **Features** — Coil design embodies all copper and copper alloy condensers, scientifically die-formed fins, which are permanently bonded to the tubes by metal, pressure-resisting brazed construction of steam carrying passages, and new provision for even steam distribution within the coils. Casings are designed for duct installation in vertical or horizontal positions and permit use of ducts having cross-sectional areas no larger than the face of the coils. New baffle arrangement helps direct flow of air through coil. Casing flanges are pierced to permit use of either bolts or self-tapping sheet metal screws. Parker-Bonderizing protects casings from rust and insures paint adhesion.

**Description** — The line includes standard blast heaters, steam distribution blast heaters and booster units. Standard blast heaters are available in seven types (combinations and tube depths and fin spacings), 17 lengths and 3 widths. Steam distribution blast heaters are furnished in 4 types, 9 lengths and 3 widths. Booster units can be supplied in 3 types, 8 lengths, and 4 widths. This provides a total of 561 individual coils from which to select to meet exacting requirements.

MODINE MFG. CO., Dept. CP, Racine, Wis.

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### For Cooling FLUIDS in CHEMICAL PROCESSES with More Accurate Control of Temperature . . .

● Niagara Aero Heat Exchanger cools liquids or gases to within 10° of the atmospheric wet bulb temperature without refrigeration, with a saving of 95% of cooling water cost and saving the equipment cost of cooling tower, piping and pumping. Niagara patented "Balanced Wet Bulb Control" holds fluid temperatures constant with properly controlled heating when needed to restore the minimum temperature.

NIAGARA AERO HEAT EXCHANGERS are successfully applied to liquid and gas chemicals and intermediates, many liquid products in process, baths of water, oils and solutions, hydraulic fluids, power equipment water-jackets, air and gas compressors, generators and condensers.

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Now 40% GREATER  
DISCHARGE  
CAPACITY

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This increased discharge capacity means:—MUCH BRIGHTER, LONGER SUSTAINED LIGHT—smaller voltage drop assuring TOP LEVEL-LIGHT VOLUME—Even greater flashlight satisfaction than already experienced by MANY THOUSANDS OF USERS—can OUTLAST 400 or more DRY CELLS—SAVES up to \$10 on each flashlight. Fits standard flashlight case using 2 or more 1 1/4" size D dry cells.

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## THOMAS TRUCK of Keokuk



THOMAS MAKES

4 WHEEL TRUCKS

2 WHEEL TRUCKS

CASTERS

RUBBER WHEELS

### SUPER CASTER

- Formed Steel Construction
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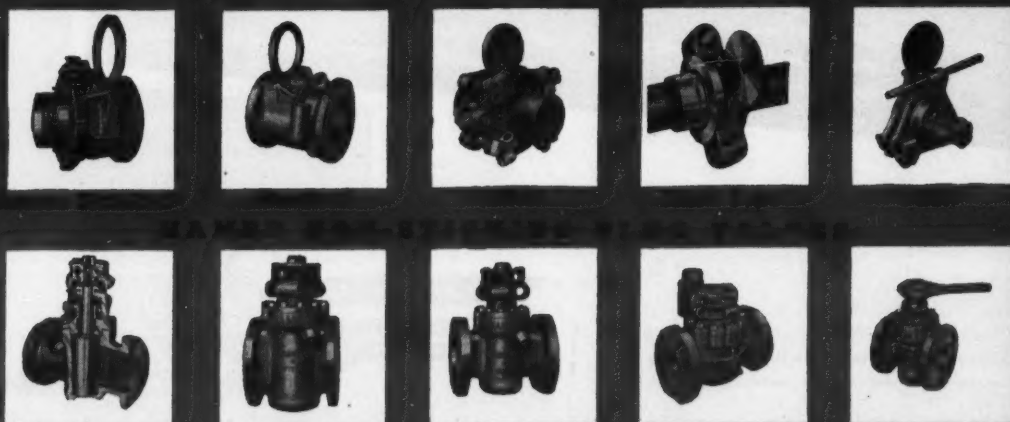
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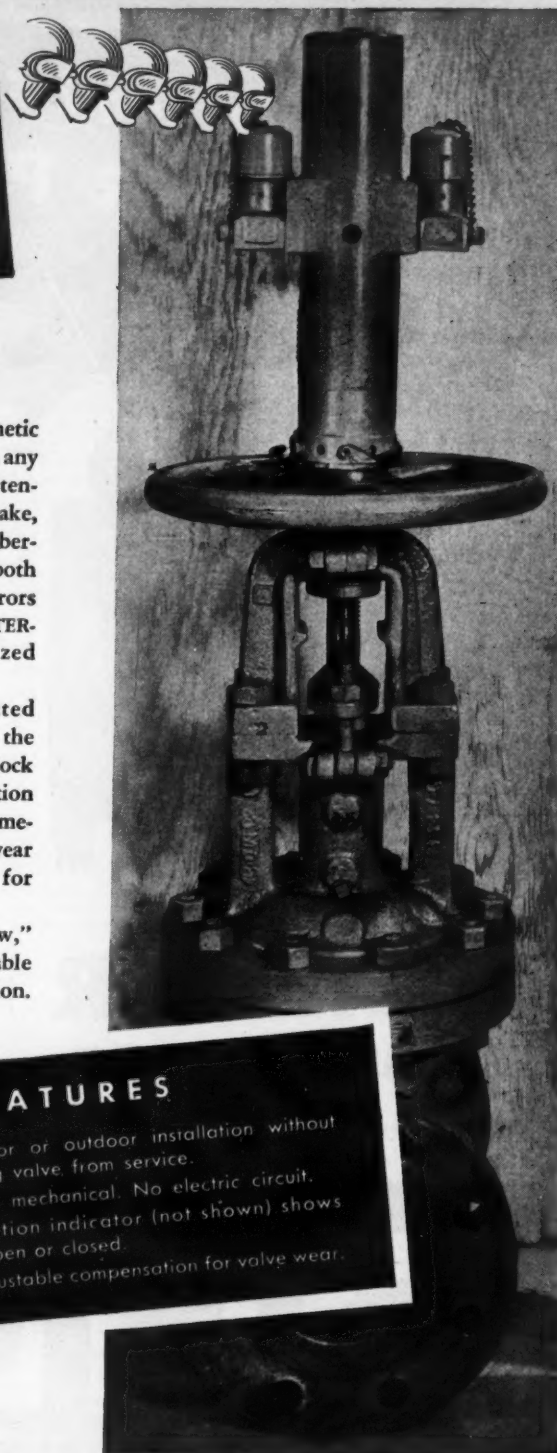
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THE INVISIBLE CREW

Precision  
Equipment

**Bendix**  
Aviation Corporation



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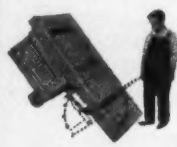
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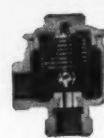
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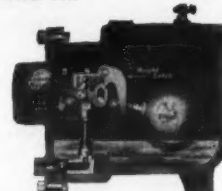
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Choice of side-inlet side-  
outlet, side-inlet top-  
outlet, or even top-inlet  
side-outlet installations  
make the MULTICLONE  
unusually adaptable to  
any space arrangement.

### HIGHER RECOVERY!

Because of  
small diameter  
tubes, the MUL-  
TICLONE recov-  
ers higher per-  
centage of fine  
particles 10 mi-  
crons and less as  
well as coarser  
particles.

### SIMPLER TO INSTALL!

In contrast to conventional cyclones  
the MULTICLONE requires only a  
simple inlet and outlet header.  
Serve an entire bank of tubes. So  
on installation costs, insulation or  
maintenance costs!

## WESTERN Precipitation CORPORATION

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR  
COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

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PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

When inquiring specify CP A2121 — see information request blank, pgs. 2-3

## ANY LENGTH YOU WANT TO SUIT YOUR REQUIREMENT

## The "HAMMOND" Screw-Veyor

... DOES AWAY WITH Old  
Fashioned "U" Shaped Boxes

STREAMLINED  
TUBULAR  
CONSTRUCTION

ALWAYS IN  
POSITIVE  
ALIGNMENT

NO DIS-  
TORTION



STANDARD FEED END ASSEMBLY

STANDARD INTERMEDIATE ASSEMBLY

STANDARD DISCHARGE END ASSEMBLY

This discharge end assembly combined with any  
intermediate assemblies and a feed end assembly  
complete conveyor system to suit any condition.

## Screw Conveyor Corporation

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ENGINEERS HAMMOND MANUFACTURING  
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## "That's Interesting"

### Synthetic Tires Require More Carbon Black

Carbon black consumption last year was 425,000 tons, exceeding production 21 per cent. Government directives have cut down the amount of carbon black in certain kinds of tires and huge production increases are ordered. The proportion of carbon black to rubber in tire treads has gone up readily. Immediately pre-war tires contained more carbon black than tires made in 1928. A factor in this great demand is the larger amount of carbon black per tire required when synthetic rubber is used. Carbon black was discovered in 1864 by a Philadelphia ink maker, J. K. Wright (B. F. Goodrich Co. — Britain).

### Combination Wood & Aluminum Building Material Sheet

Aluminum should become a widely used building material. Research has developed a combination wood and aluminum (Reynolite) sheet which has great strength, rigidity, attractiveness and protection against fire, heat, cold, termites. Applications will utilize many pounds of aluminum (Reynolds Metals Co.).

### Breaking the Ice

The newest and most powerful Coast Guard icebreaker is equipped with a hydraulic system that breaks it to and fro by pumping water first into a forward tank and then into a portside tank, tilting the vessel in the double hull. This motion shakes the vessel loose. (Westinghouse News Front)

### Only 26 Doctorates In Chemistry In U.S. in 1900

The number of doctorates in chemistry in the United States in 1900 was 26; in 1910, 48. The number was still small in 1921 but by 1931 it had risen to 390 and in 1940, 527. The figures were quoted from an address by Dr. Lucas P. Moses, Monsanto Chemical Co., before the American Chemical Society who pointed out the threat to this continued progress by continued drafting of young scientists.

### 12,000,000,000 Headaches

In 1918 aspirin was produced by 10 companies. In 1923 production was 3,500,000 pounds. Last year's figure was 8,500,000 pounds or enough tablets for 12,000,000,000 headaches.

### Foot Spraying Units

A spray dispensing device that applies a solution to the feet to guard against athlete's foot, etc. especially designed for use in shower rooms. The dispenser consists of a circular grill mounted on a base 28 inches in diameter. A tank is contained in the base of the machine. By application of vertical air compressors and compression rings an atomized spray is ejected when the foot is stepped on.

### Pneumatic Conveyors Used in 1853

A pneumatic type of conveyor is approaching its centennial. Perhaps one of the very first practical applications was that used by the London Pneumatic Conveying Company in 1853.

For more information on product at right, specify CP A1732 . . . . see information request blank between pages 2-3.

# FIRST of its kind

**S**HOWN HERE is the first Dow-therm heated and cooled synthetic resin production kettle in this country. It exemplifies the chemical, engineering and fabricating "know-how" which Blaw-Knox offers to the chemical and process industries.

The leadership of Blaw-Knox has long been acknowledged in the design and production of rolls, rolling mill machinery and high temperature furnace equipment for the ferrous and non-ferrous industries. Also in numerous products emphasizing stability, efficiency and economy for railroads, electronics, public utilities, equipment for the construction industry and for industry in general, including prefabricated power piping and a host of other important products. A brief glance at the list of Blaw-Knox divisions will give you an idea of the engineering background, as well as the skills and facilities which Blaw-Knox can bring to an industrial problem within its scope.

## BLAW-KNOX COMPANY

A PACEMAKER FOR AMERICAN  
INITIATIVE AND INGENUITY

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Prefabricated Piping Systems

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**SPECIAL ORDNANCE DIVISION,**  
Bofors Anti-Aircraft Gun Mounts and Mechanisms

**PITTSBURGH ROLLS DIVISION,**  
Rolls for Steel and Non-Ferrous Rolling Mills

**UNION STEEL CASTINGS DIVISION,**  
Steel and Alloy Castings

**NATIONAL ALLOY STEEL DIVISION,**  
Heat and Corrosion-Resistant Alloy Castings

**MARTIN FERRY DIVISION,**  
Bofors Anti-Aircraft Gun Mounts

**BLAW-KNOX SPRINKLER DIVISION,**  
Automatic Sprinklers and Deluge Systems

### A FEW VICTORY PRODUCTS

ANTI-AIRCRAFT GUN MOUNTS	LANDING BARGE	POWDER PLANTS
PIPING FOR NAVAL VESSELS	SYNTHETIC RUBBER PLANTS	GUN SLIDES
ROCKETS	CAST ARMOR FOR TANKS & NAVAL CONSTRUCTION	16" PROJECTILES
		CHEMICAL PLANTS

Designed and built in 1937 for  
Dow and Reynolds Company, Inc.

HERE'S WHAT

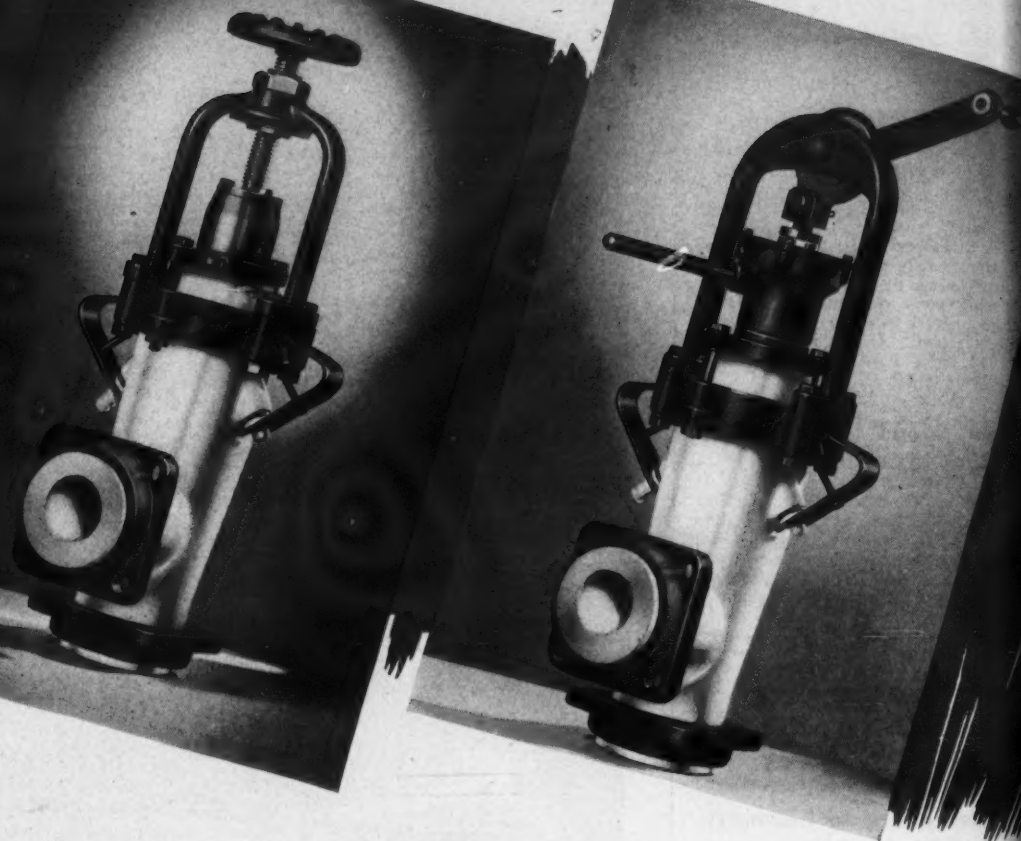
*non-porous*  
MEANS



• Many ceramic materials are classed as "non-porous" by their manufacturers. Our study of the subject convinces us that the difference between slight porosity and no porosity is the difference between disintegration of other materials and the unlimited long life of Lapp Porcelain—the capillary pressures and corrosive action of absorbed moisture. The Lapp test for porosity is the pressure chamber sketched above. A fragment of material is impressed with penetrating Fuchsin dye at 100,000 lbs. per sq. in. for many hours. Lapp Porcelain, glazed or unglazed, shows no trace of penetration.



# Lapp



## CORROSION-PROOF VALVES OF *Lapp Porcelain*

• Starting with a material which is itself completely corrosion-free and contamination-proof, Lapp design of valves provides that corrosive chemicals being handled shall come in contact only with surfaces of solid porcelain. Stems and bearing surfaces are precision lathe-ground, polished and lapped. This assures a tight seal and smooth operation with low packing pressure. A spring washer, compressed as the valve is closed, maintains sealing pressure under temperature variation and vibration. Hand wheel and quick-opening models, both angle and Y-type, diameter  $\frac{1}{2}$ " to 4". Catalog data and specifications on request. *Lapp Insulator Co., Inc., Chemical Porcelain Division, LeRoy, N. Y.*